Asymmetrical Balance of Power in Preadolescents' Mutual Friendships

by

Wendy E. Belbin

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Department of Psychology
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Abstract

Dyadic friendship asymmetry was examined in relation to gender, friendship quality, and friendship status. Sixty-nine grade five children and their mutual, same-sex, friends participated in a laboratory session comprised of various activities and completed questionnaires to identify mutual friends and evaluate friendship quality. Asymmetry of power was assessed observationally during an origami task. Variations in balance of power were evident in children's friendships. Boys' dyads had significantly greater levels of asymmetry than girls' dyads. Regardless of gender, asymmetry was associated with lower friendship quality, particularly as indexed by validation and caring and conflict resolution. Asymmetry was unrelated to differences in friendship status. Furthermore, relative individual power within the friendship was not related to individual perceptions of friendship quality. The implications of these findings in the theoretical and empirical literature were considered and suggestions for future research were made.

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Introduction

Beginning early in life, children spend much of their time interacting with peers. As children move through toddlerhood, middle childhood, and adolescence, peer relationships hold an increasingly important place in their lives (Hartup, 1993). Consequently, the goal of many researchers has been to develop an understanding of how peer relations contribute to children's short- and long-term development. One commonly studied indicator of children's peer relations in the school setting is sociometric status or the extent to which children are accepted and liked by their peers. More recently, however, the unique effects of friendship on children's adjustment have been examined (e.g., Parker & Asher, 1993; Vandell & Hembree, 1994). In the following pages, I will outline the theoretical significance of children's friendships and the progression of research in this area. Furthermore, I will demonstrate the necessity of research on asymmetrical characteristics, which are likely present in the friendships of preadolescents.

Distinguishing Peer Relationships

Sociometric Status

Peer status has been linked to many aspects of social and emotional development in children. In fact, researchers have demonstrated that children who are rejected by their peers experience a wide range of social problems (e.g., Bukowski & Hoza, 1989; Roff, Sells, & Golden, 1972). Asher, Hymel and Renshaw (1984) found that children's feelings of loneliness and children's school achievement were both significantly related to sociometric status. Specifically, rejected children experienced more loneliness and lower school achievement than accepted children. Even as early as kindergarten, the importance of peer status is evident. Popular kindergarteners generally exhibit more prosocial and cooperative behaviours (Rubin & Daniels-

Beirness, 1983), whereas rejected kindergarteners have lower school performance, more school avoidance, and more negative school perceptions than accepted kindergarteners (Ladd, 1990). Taken together, these studies suggest that peer acceptance may serve, at least in the short-term, to protect against feelings of loneliness and negative attitudes toward school.

Friendship

The sociometric status of a child is typically formed through group interactions in the school setting. However, it is essential to remember that children also interact with each other on dyadic and even triadic levels. Friendships, for example, are special kinds of peer relationships that are distinct from peer status in several ways. Although there is some debate surrounding the definition of what constitutes a friendship, two features emerge as integral components of friendships (Rubin, Bukowski, & Parker, 1998). First, friendships are believed to be voluntary because individuals generally choose their friends. Second, friendships are believed to be reciprocal in terms of liking and identification of each other as friends. When studying children's friendships, researchers have been careful to include only pairs that received reciprocal nominations (e.g., Buhrmester, 1990; Parker & Asher, 1993).

These defining characteristics of friendships are clearly different from peer status. Children generally have little control over their sociometric status in the sense that they cannot choose who likes them, nor does their level of acceptance depend on any direct input (Asher, Parker, & Walker, 1996). Since the general properties of peer status and friendship are distinct, it is essential that they be considered separately in empirical research (Newcomb & Bagwell, 1996; Bukowski & Hoza, 1989).

In line with this reasoning, Parker and Asher (1993) investigated the unique contributions

of peer status and friendships on loneliness in elementary school children. They found that many low-accepted children had best friends and were satisfied with these friendships. Furthermore, they demonstrated that peer status and friendship quality each made unique and significant contributions to the prediction of loneliness. Similarly, Vandell and Hembree (1994) demonstrated that children's peer status and friendships made unique and significant contributions to their social and emotional adjustment, academic performance and self-concept. The results of these studies suggest that peer status and friendships each make independent contributions to measures of adjustment and, as a result, should no longer be confounded in the research on peer relations. In an attempt to develop a comprehensive understanding of how friendships affect children's development, many researchers believe it is now time to selectively focus on these relations (Bukowski, Newcomb, & Hartup, 1996). However, before discussing the empirical work on children's friendships, it is important to first consider the theoretical positions of early developmental researchers.

Theoretical Perspectives on the Significance of Children's Friendships

Cognitive Approach

There has been a trend toward a more exclusive focus on children's friendships in the literature on peer relations throughout the past several decades. However, psychologists have speculated about the significance of children's friendships and peer relationships for many years. Even as developmental psychology was first emerging as a separate field, the importance of peer relationships in children's development was acknowledged (Piaget, 1932). Piaget suggested that children's relationships with their peers are unique because they are not based on any hierarchy, such as that which exists between children and their parents or caregivers. Peer relationships are

important in development because competencies needed for future interpersonal relations cannot be attained solely through parent-child interactions. Piaget claims that one of the most important features in children's friendships is equality, which allows children to freely express their ideas and opinions. Through the maintenance of equality, friends learn to cooperate and coordinate one another's ideas. These processes help generate the thoughts needed for the successful development of cognitive abilities. Thus, Piaget's cognitive developmental approach stressed the necessity of children's interactions with their peers to help develop cognitive skills, involving problem solving, communication and schematic coordination (Hartup, 1996).

Neo-Freudian Approach

Sullivan (1953) took a neo-Freudian approach in his theory of interpersonal psychiatry. An integral component of his theory was the importance of friends or "chums" in children's socialization and development. This is in sharp contrast with traditional psychoanalytic theory, which gave, at best, very minimal support for the role of friendships in children's development. In line with Piaget, Sullivan stressed the importance of equality in children's relations with their peers. According to Sullivan, it is through interactions with friends that children develop an awareness and sensitivity toward others by learning to communicate on a "level field" and take one another's perspective. Furthermore, feelings of interpersonal intimacy found in friendships were believed to contribute to the enrichment of self-esteem. Sullivan suggested that children without friends, as opposed to children with friends, would be more susceptible to feelings of loneliness and would not be given the opportunity for self-validation in this domain.

In a later empirical study, McGuire and Weisz (1982) found evidence to support Sullivan's beliefs. Children with friends were found to be more altruistic and better understand the

emotions of others than friendless children. Furthermore, children's popularity was unrelated to these characteristics. Thus, as Sullivan suggested, friendships likely help provide children with social skills such as sensitivity and responsiveness toward others.

Developmental Approach

Friendships are believed to be important throughout childhood, but they are especially critical in preadolescence (Sullivan, 1953). As children move through the various stages of development, friendships offer them specific and appropriate benefits. In one study, children of different ages were asked to write an essay on what they expect or want from their best friends (Bigelow, 1977). Bigelow found children's friendships moved through three age-related stages. The first stage involved relatively superficial aspects of friendships, such as engaging in common activities. In the second stage, the importance of being able to admire their friends' moral values was emphasized. In the third stage, intimacy and understanding were the central friendship expectations.

In a similar study, Parker and Gottman (1989) analysed conversations that took place between friends. They discovered that the friendship functions of young children primarily involve aspects of play, whereas friendships in middle childhood regulate and develop skills associated with behavioural norms. Further, adolescent friendships were found to have an important function in identity formation.

The results of these studies and others (e.g., Zarbatany, Hartmann, & Rankin, 1990; Buhrmester, 1990; Bukowski, Hoza, & Boivin, 1994) suggested that children's friendships accommodate to the developmental stage of the child and offer needed support. This may be especially true of children in pre- and early adolescence. It is during this developmental period that

children form the basis of their own identity and perceptions of others (Erikson, 1968). Cognitive processes that promote identity formation can take place as children and their friends engage in social comparisons and confront diverging values and ideas (Hartup, 1996). Validation and feedback from friends may support successful adjustment in the stages of adolescence. Moreover, Sullivan (1953) suggested that preadolescents, through their friends, develop a base for self-esteem and the skills needed for close interpersonal relations. Since the formation of one's identity, self-esteem, and social skills are crucial elements in an adolescent's development, supportive friends at this age are of great importance. Consequently, I will focus on the friendships of preadolescents in the present study.

In brief, early theorists such as Piaget and Sullivan believed that children with friends would have a better opportunity to develop adequate social and cognitive skills than those without friends. Furthermore, friendships during pre- and early adolescence play a critical role in identity formation. Although the importance and uniqueness of children's friendships were acknowledged many years ago, it has only been in the past few decades that researchers have begun to uncover the complexities found in these relationships. Studies on children's friendships have advanced through the continued examination of the social and emotional benefits of having friends but also by beginning to consider the different qualities and features emergent in each friendship dyad (Ladd, 1999).

Individual Friendship Experiences

It is generally recognized that children's friendship experiences vary from dyad to dyad and it is not enough to distinguish only between children with friends and those without friends. In this section, dyadic characteristics and the assessment of friendship features and quality will be

discussed. Harłup (1996) suggested children's friendships can vary in two main ways. First, the individuals whom children choose as their friends have their own unique personalities and behaviour patterns. For instance, some children may act extremely aggressive or dominant, whereas others may act very shy or withdrawn. These behaviours will in turn impact the characteristics present in friendship dyads and hence the experiences of each child.

Second, children's friendships may differ in their qualities and features. In the literature there has been some debate regarding the conceptual definitions of these terms (Berndt, 1996). In general, friendship features refer to any characteristics present in the dyad, such as conflict, intimacy, or caring. For the most part, these features exist on a continuum and vary from dyad to dyad. Friendship features can be associated with either positive feelings such as happiness, comfort and acceptance or negative feelings such as hurt, anger, and rivalry (Keefe & Berndt, 1996). Friendship quality generally refers to the extent to which a friendship has more positive than negative features (Berndt, 1996).

Furthermore, friendship features and quality can be assessed on both individual and dyadic levels. Whenever the perceptions or behaviours of both children in a friendship unit are considered, features are classified as dyadic. For instance, averaging the ratings of self-reported conflict between each child in the dyad will yield a single dyadic measure of conflict. Alternatively, when the perceptions or behaviours of each child are considered separately, features are considered individual. In individual analyses, children's responses regarding friendship features are considered in isolation. Thus, there are two scores for the friendship unit. Both types of analysis will be used in this present study.

Identification of Friendship Features

The identification of individual and dyadic features in children's friendships has recently been the focus of many studies. Berndt (1996) conducted a study with elementary school children who were asked directly about what features they believed made someone a "best friend." A total of eight categories were identified from the children's responses. Similarly, Bigelow (1977) asked children, ranging form 6 to 14 years of age, what characteristics they expected in their best friendships. The majority of expectations were categorized into one of eight features. Other experimenters used comparable categories to determine associations between various types of friendships and measures of adjustment. In a comparison of children's perceptions of their friends and acquaintances, Berndt and Perry (1986) used an interview to measure six features of peer relations. From these studies, three common features emerge as essential to the friendship unit: common activities/play, intimacy, and loyalty/commitment. The identification of features characterizing children's friendships is a necessary step in understanding the functions of these relationships. In the next section, the various techniques developed to measure features in children's friendships will be evaluated.

Self-Report Measures

The continued examination and assessment of children's friendships prompted researchers to develop meaningful and reliable measures that could be used to evaluate friendship features and overall quality. In 1993, Parker and Asher finalized the Friendship Quality Questionnaire (FQQ), which consisted of a 40-item index with six sub-scales, including validation and caring, conflict resolution, conflict and betrayal, help and guidance, companionship and recreation, and intimate exchange. Around the same time, Bukowski, Hoza and Boivin (1994) developed a similar five-item scale. Both of these scales were aimed at measuring friendship

quality in middle-school aged children and early adolescence.

The friendships of even younger children were also of interest to researchers. Ladd, Kochenderfer, and Coleman (1996) developed a friendship quality interview to assess the friendships of kindergarten children. The five sub-scales used in this study consisted of validation, aid, conflict, exclusivity, and disclosure of negative affect. These features are very similar to those used on the FQQ and the scale developed by Bukowski, et al. (1994).

The development of each one of these scales is an essential addition to the field of research on children's friendships because they allow for reliable comparisons among differing types of friendships. Using self-report techniques, researchers can study the associations between specific features in children's friendships and aspects of their development. Furthermore, the positive features on the scales can be combined to represent the overall quality of the relationship (Newcomb & Bagwell, 1996). The usefulness of these self-report techniques is evident. Yet, there are several disadvantages that must first be considered when using such measures to assess friendship features.

Evaluation of Self-Report Measures

One limitation of the majority of friendship quality scales is that they are biased toward the positive features of friendships. This concentration on the positive features of friendship has occurred despite the fact that children themselves report problems of rivalry and competition in their friendships (Berndt, 1996). Berndt (1996) believed that problems and negative features in children's friendships are inevitable and should be given more consideration in empirical research.

Another concern with many of the current friendship quality measures is related to their sub-scales. Berndt (1996) claimed that the sub-scales measuring the positive features of

friendships may be quite redundant. This is supported by the fact that the mean intercorrelations among the positive measures on the FQQ is .63 (Furman, 1996). Based on these two arguments, Berndt recommended that friendship quality could best be assessed by compiling all of the positive and negative friendships features reported by each child into a single quality score. This method of assessment would allow for consideration of any negative features and inequalities of power or control that may exist in the relationship. Although Berndt's (1996) suggestion is logical, much information may be missed by dichotomizing all friendship features into positive and negative categories.

Since the links between children's friendships and their development are still somewhat obscure, I believe that friendship features should be considered separately in hopes of gaining a more complete understanding in this area. Overall friendship quality should be used as an initial form of analysis. Keeping this in mind, I also believe, as Berndt suggested, that it is necessary to include specific measures of negative features in the assessment of children's friendships.

Thus, the most complete measures should include specific assessments of both positive and negative features. For example, the Network of Relations Inventory (NRI) developed by Furman and Buhrmester (1985) contains questions about family and friend relations that tap primarily into three factors: support provisions, negative interactions and relative power (Furman, 1996). Similarly, a questionnaire developed by Alder and Furman (1988) measures 16 features of relationships between children and their family and friends. These features fit into four main categories: warmth/closeness, conflict, exclusivity, relative power/status. Warmth and closeness are believed to reflect positive relationship features, whereas exclusivity and relative power reflect negative features. Both the NRI and the measure by Alder and Furman (1988) represent a comprehensive approach to assessing relationship features.

Observational Measures

All the measures discussed thus far are based on children's own perceptions and beliefs. It is possible that the reported features of a friendship may not represent the dynamics that actually take place. Furthermore, each child within the friendship is likely to experience the relationship differently as a result of his or her own individual characteristics and perceptions (Furman, 1996). In an attempt to overcome these assessment problems, observational methods of evaluation are often employed (e.g., Gavin & Furman, 1996; Kerns, Klepac, & Cole, 1996; Schneider, 1999). Data from observational and self-report measures are often only weakly related (Simpkins & Parke, 2001) and may even be contradictory (Furman, 1996). For example, Furman (1996) warned that the measure of relative power on the NRI directly assesses children's perceptions. Children may see their friendships as equal even when they are not. Furthermore, children may be reluctant to admit they are in an unequal friendship because of social desirability pressures (Pepler & Craig, 1998). It is possible that observational assessment may reveal an unequal balance of power even when self-report questionnaires do not. Consequently, observational analysis of friendship interactions may provide a more accurate picture of certain dyadic features than self-reports.

Observational analyses of interactions between friends have been used to measure dyadic characteristics in several studies (e.g., Bugental & Martorell, 1999; Kerns et al., 1996; Simpkins & Parke, 2001). Bugental and Martorell (1999) used observational coding during a free play interaction session with best friend dyads to evaluate children's verbal content on a 5-point scale (eg., derogation of self/friend, positive statements of self/friend) and vocal quality on a 7-point scale (eg., pleasant/ unpleasant, strong/weak). Moreover, Kerns et al. (1996) and Schneider

(1999) used a global coding system to observationally score several variables. Balance of power, for example, was rated on a 3-point scale after viewing the videotapes and reading the transcripts of each dyadic interaction session. Taken together, these studies suggest observation analysis may be useful in detecting different dyadic characteristics.

Although observational assessment may present a more accurate picture of friendship dynamics, this approach is not necessarily more appropriate than self-report. The perceptions of the child must also be considered because their perceptions may affect the relationship. It is also possible that, depending on the setting or task from which the observation measures were taken, behaviour may not reflect general patterns in the relationship. Behaviours of interest may be difficult to observe or occur infrequently (Pepler & Craig, 1998). Therefore, the best method to obtain a comprehensive assessment of children's friendship features may be to examine both observational and self-report questionnaires.

Nevertheless, both types of analyses suggest children do have differing friendship experiences. Some children's friendships may be characterized by high levels of most positive features, whereas other children's friendships may be characterized by low levels of positive features. Personal attributes such as gender and personality may partially account for differences in individual friendship experiences (Parker & Asher, 1993; Berry, Willingham, & Thayer, 2000).

Gender Differences

Researchers measuring friendship quality have found some evidence of a gender difference (eg., Parker & Asher, 1993; Bukowski et al., 1994). For instance, Parker and Asher (1993), using their self-report index, found that boys' friendships were characterized by less intimate exchange, less validation and caring, less help and guidance, and more difficulty resolving conflict than girls'

friendships. Similarly, Bukowski et al., (1994) found that boys' friendships had lower reported help, closeness, and security than girls'. In an observational study of the peer relationships of preschoolers boys were found to use more competitive and physical behaviours in same-sex quartets with their classmates to obtain a rewarding resource than girls (Charlesworth & Dzur, 1987).

Other gender differences have also been found in friendships (Maccoby, 1990). Girls tend to form close friendship groups with only one or two other girls whereas boys tend to interact in large groups (Maccoby, 1990). Furthermore, girls emphasize interpersonal connections, which results in open communication, self-disclosure and intimacy in their friendships (Buhremester & Prager, 1995). This style of interaction is sometimes referred to as an "enabling style" because intimacy is built when one another's opinions are taken into consideration. In contrast, boys emphasize individual status in their friendships and are often referred to as having a "status-orientated style" (Buhremester & Prager, 1995). Boys are more likely to use commands, threats, and physical force in attempts to dominate and compete with their peer group than are girls (Maccoby, 1990). In short, it is likely that boys' friendships are characterized by lower levels of positive friendship features and by more issues of power and dominance than girls' friendships. In the next section, the link between specific friendship features and measures of adjustment will be considered.

Adjustment and Friendship Features

Both observational and self-report techniques have revealed differences in boys' and girls' friendships. However, researchers studying friendship features have rarely combined these two measures. Using primarily self-report assessments, it has been demonstrated that children do

experience different features in their friendships and the existence of positive friendship features has been associated with successful adjustment in a number of domains (e.g., Ladd et al., 1996; Parker & Asher, 1993).

School Adjustment

A relationship has been found between children's friendship experiences and certain measures of their school adjustment (Ladd et al., 1996; Berndt, 1986). In their study on the friendships of kindergarten children, Ladd et al. (1996) demonstrated that positive features in children's friendships predicted school adjustment at the end of the year. High validation and aid in friendships was associated with more school liking and peer support than low levels of this feature. Moreover, a higher frequency of conflict in the friendships of boys was associated with a lower degree of school adjustment. Similarly, Berndt (1986) found that children who reported primarily positive features in their friendships had higher scores for self-esteem and valued school more than those who reported mainly negative features in their friendships.

Emotional Adjustment

A relationship has also been demonstrated between positive friendship features and emotional adjustment. Parker and Asher (1993) found that each positive friendship feature on the FQQ was significantly and negatively correlated with children's reported loneliness. This suggests that overall high-quality friendships may offer children more protection against feelings of loneliness than low-quality friendships. Fordham and Stevenson-Hinde's (1999) study on shyness in children also supports this proposition. High-quality best friendships were linked to higher perceptions of global self-worth, less loneliness, and less trait anxiety for 10-year-olds than low-quality best friendships. Taken together, the results suggest that children with overall higher-

quality friendships (i.e., high levels of most positive features) experience more successful emotional adjustment than children in lower-quality friendships. This relationship is evident regardless of sociometric status (Parker & Asher, 1993) and individual characteristics such as gender and shyness (Fordham & Stevenson-Hinde, 1999). Thus, it is possible that friendships characterized by many negative features may be problematic to children's adjustment. In the next section, the nature of asymmetrical children's friendships and the possibility that these friendships may be linked to negative development will be discussed.

Asymmetrical Friendships

Types of Asymmetry

Bukowski et al. (1996) expressed concern with stable "imbalance" or "asynchrony" in friendships, claiming that these relations may not be as beneficial to a child's well-being as symmetrical best-friendships. Children in asymmetrical friendships may lack the opportunities to freely express their ideas and opinions. Such restrictions may interfere with positive development and adjustment (Bukowski et al., 1996). Windle (1994) reported evidence that suggests the friendships of delinquent adolescents are characterized by greater imbalance than the friendships of non-delinquents. In this study, Windle also discussed the need for further research on the asymmetry/symmetry dynamic of friendships. My specific focus in the present study will be on asymmetries in children's friendships, given that there is much speculation but a general lack of empirical research in this area.

Based on the previous review of the literature on children's friendship features and gender differences, there is sufficient evidence to suggest negative features are salient components of friendships. Boys' friendships may be particularly susceptible to negative features involving issues

of power and dominance. Asymmetry may be one negative feature of friendships that has received little attention from researchers. Asymmetrical or unequal friendships can be defined as dyadic relationships in which each person does not have a comparable chance of influencing the other's actions and views (von Salisch, 1996). Power is unequally distributed in the sense that one person has more control over the activities of the dyad than the other.

In asymmetrical friendships, one child is often recognized as the "boss" of the relationship. This dominant child may wholly decide the recess, lunch and after school activities of the dyad. The suggestions and input made by the non-dominant friend may be ignored or refuted by his or her friend. Furthermore, leader-follower roles may be adopted during play time and school projects. Physical force and direct (e.g.,commands, threats) and indirect (e.g., suggestions) verbal strategies may be used as a means to control friends (Hussong, 2000).

One way inequalities may occur is as a result of sociometric status (von Salisch, 1996). For example, a friend of high status may hold more power and control when he or she is in a friendship with a child of lower status than if he or she was in a friendship with someone of equal status. Furthermore, inequalities also may exist as a result of differences in age or skill. This difference commonly results only in temporary inequality. In a study designed to examine peer tutoring processes, novice and expert pairs were found to exhibit asymmetric interactions (Verba, 1998). However, as the novice child learned the task, the interaction became more symmetric.

Evidence of Asymmetry in Children

Several researchers have discussed the importance of including measures of relative power between friends (Furman, 1996; Berndt, 1996), yet items assessing inequalities are rarely included in studies on children's friendship. There have been only a few researchers that have included

measures of power, control, and/or competition in friendships (e.g., Kerns et al., 1996; Gavin & Furman, 1996; Bugental & Martorell, 1999; Schneider, 1999). In their examination of girls' relationships with their mothers and best friends, Gavin and Furman (1996) included observational measures of self-centeredness, jealousy, and power, among other items. They found that individuals in harmonious friendships (defined as having fewer negative interactions than support) had higher ratings for the abilities not to be self-centred, negotiate power in the relationship, and regulate jealousy. Thus, disharmonious relationships may be characterized by more power struggles than harmonious relationships. Bugental and Martorell (1999) demonstrated that children of powerless parents, and children who saw themselves as powerless, act in a highly competitive way with their friends. Although untested, the authors claim that such high levels of competitiveness may cause problems of inequality in children's peer relations. In short, there is some evidence that suggests children experience negative features in their friendships that may be related to an unequal balance of power. Because work on inequality in children's friendship is generally lacking, a review of the research on adult friendships may be helpful in understanding asymmetrical friendships.

Evidence of Asymmetry in Adults

In the adult literature, explorations of power and other internal hierarchical dimensions of friendship are also rare (Adams & Blieszner, 1994) yet are believed to exist (McWilliams & Blumstein, 1991). Blieszner and Adams (1992) asserted that such assumptions made in research need to be tested. Most previous research has stated implicitly that friendships are egalitarian without exploring this dimension. However, these researchers claim that since variation has been found on other measures, such as intimacy, an investigation of power hierarchy in friendships is

needed. Some friendships may be characterized by a more unequal balance of power than others.

In a study of university students, Veniegas and Peplau (1997) found that 60% of their sample were currently in a friendship that was unequal in power. Furthermore, participants reported that their equal-power friendships were more satisfying, provided a greater sense of emotional closeness, encouraged greater self-disclosure, and were more interesting and helpful than their unequal-power friendships. Interestingly, unequal friendships were not evaluated negatively nor did they differ from equal friendships in terms of their length or frequency of association.

In contrast to the lack of empirical research on asymmetry in friendships, balance of power in romantic relationships has been studied extensively. Asymmetrical power has been documented in dating (Galliher, Rostosky, Welsh & Kawaguchi, 1999), married (Kingsbury & Scanzoni, 1989) and same-sex couples (Caldwell & Peplau, 1984). The power imbalance observed in these relationships is often explained by sex role differences (Kingsbury & Scanzoni, 1989; Sprecher & Felmlee, 1997). However, even in same-sex couples, asymmetries of power were evident and unrelated to gender role-playing (Caldwell & Peplau, 1984). Furthermore, unequal balance of power in lesbian relationships was related to lower overall personal satisfaction and relationship closeness. The body of research on balance of power in romantic relationships suggests that asymmetry is significant feature in many types of relationships. Even when the notion of shared power is emphasised by partners, there remains variation in power (Caldwell & Peplau, 1984; Kingsbury & Scanzoni, 1989). These findings lend further support for the need to address asymmetry variations in friendship relations.

The results of these studies on adult friendships and romantic relations suggest that if

children experience an unequal balance of power in their friendships, the overall quality of the relationship may be diminished. However, it is not clear if all cases of asymmetry concern power and dominance. Other factors such as personality style and skill may be interpreted as asymmetry. If this is the case, the concept of asymmetry may need to be reexamined. Nevertheless, the theoretical propositions and empirical results discussed previously warrant further examination of asymmetries in children's friendships. The predictions made in the present study are highly speculative since there has been little research that has directly measured asymmetry and explored the effects of this imbalance on children's friendships.

Summary

In summary, early theorists stressed the importance of children's friendships in the development of successful social and psychological adjustment, claiming that the equality assumed to be found in these relationships provide children with the opportunity to develop needed social and cognitive skills. Thus, if some children experience asymmetrical friendships, they may be denied the opportunity to freely express their ideas and beliefs. This may, in turn, be detrimental to their development.

Despite the early theoretical speculation about children's friendships, the trend toward a more exclusive focus on children's friendships has been a recent development in the empirical research on peer relationships. A clear relationship has been found between positive friendship quality and social and emotional adjustment. However, many issues have not received adequate attention by experimenters. One of these areas involves negative features of friendships. Asymmetry may be of particular importance because equality is believed to be a defining feature of friendship. Yet, the assumption of equality generally remains untested. The present study is

designed to answer two general questions: Do preadolescent children experience asymmetries of power in their friendships? And, if so, what are the correlates of such asymmetries?

Areas of Examination and Hypotheses

In an attempt to answer these questions, I will focus my examination on asymmetries in preadolescent children's friendships. Based on the research discussed previously, I propose that asymmetries in children's friendships will be evident. Observational measures of control taken from a dyadic interaction task will be used to assess asymmetry.

Asymmetry and Individual Differences Hypotheses

Hypothesis one. On average, boys' friendship dyads will be more asymmetrical than girls' friendship dyads, as reflected by greater SPS total frequency and percentage success asymmetry.

Individual differences may affect the extent to which children are in asymmetrical friendships. Based on the trend that boys use more commands, threats, and physical force in attempts to dominate their peer group than do girls (Maccoby, 1990), I predict that boys' best friendship dyads will be more asymmetrical than girls' best friendship dyads. Boys may be able to tolerate more inequalities in their friendships than girls because boys place less importance on building intimacy and trust and more emphasis on individual status than girls (Buhremester & Prager, 1993).

Hypothesis two. Differences in friendship status within friendship dyads will be positively correlated with asymmetry in friendship dyads.

Asymmetries often occur as a result of differing sociometric status (von Salisch, 1996). In the present study, friendship status is defined as the number of mutual friend nominations, which is theoretically strongly related to sociometric status. It is likely that children in asymmetrical dyads

will differ in friendship status to a greater extent than children in symmetrical friendships.

Asymmetry and Friendship Features/Quality Hypotheses

Hypothesis three. Dyadic asymmetry will be negatively correlated with dyadic overall positive friendship quality.

Hypothesis four. Asymmetry in children's friendship dyads will be negatively correlated with dyadic validation and caring, help and guidance, intimate exchange, and conflict resolution. Asymmetry will not be correlated with dyadic companionship and recreation.

There has been little work on the correlates of asymmetrical friendships in children. If children do experience inequalities in their friendships, then it is essential to investigate the possible correlates of these inequalities. Based on the results of Veniegas and Peplau (1997), I propose that asymmetry in friendships will be negatively correlated with overall friendship quality.

Specifically, I predict that asymmetrical friendships will be negatively correlated with validation and caring, help and guidance, intimate exchange and conflict resolution. Furthermore, I believe that the friendship feature of companionship and recreation will not be related to asymmetry in children's best friendships. The companionship feature reflects the frequency of contact between friends (e.g., spending recess and lunch together). In an asymmetrical relationship, companionship may be one area of the relationship that is being controlled. For instance, the dominant child may insist that his or her friend spends recess and lunch with him or her. Also, the asymmetrical friendships of adults did not differ from equal friendships in frequency of association (Veniegas & Peplau, 1997). Thus, adults in asymmetrical friendships seem to spend as much time with their friends as individuals in symmetrical friendships.

Question one. Is there an association between reported frequency of dyadic conflict and

friendship asymmetry? And, if so, what is the direction of this relationship?

Although the direction of the relationship is not clear, it is likely that the reported frequency of conflict will differ with symmetry. It is possible that when one child is clearly in control of the relationship, the other child may accept the dominant child's position and avoid confrontation. As a result, their relationship will not be conflictual. Alternatively, the asymmetrical relationship may be characterized by a high frequency of conflict, if one child confronts the other whenever he or she makes attempts to control the relationship.

Hypothesis five. Individual perceived friendship quality will be positively correlated with individual relative power scores.

Each individual within a dyad may perceive friendship features differently. I predict the child with more power in the dyad will perceive the friendship as having an overall higher quality than the individual with less power in the dyad.

Question two. Is there an interaction between gender and asymmetry in predicting overall quality of friendship?

Interactions also will be tested because it is likely that several individual differences will affect the relationship between asymmetry and quality. The interaction between gender and asymmetry in predicting overall friendship quality will be explored. Asymmetry in boys' and girls' friendships may have different correlates. For instance, low quality friendships in boys may be related to high levels of asymmetry, whereas low quality friendships in girls may be unrelated to asymmetry.

Question three. Is there an interaction between friendship status and asymmetry in predicting overall quality of friendship?

The interaction between friendship status and asymmetry in predicting overall friendship

quality will also be explored. Asymmetry may be related to quality only when there is a large difference between friendship status within dyads. When there is a smaller difference between friendship status, friendship quality and asymmetry may be unrelated.

Significance of the Study

This study is believed to be significant for three main reasons. First, early theoretical viewpoints emphasised the importance of equality in children's friendships. Youniss (1980) integrated Piagetian and Sullivanian ideas into one theoretical description that focussed on the opportunities provided by equal friend relationships. However, Youniss (1980) and others (Berndt, 1996; Furman, 1996) suggested that equality may not be such a ubiquitous feature of children's friendships. It is necessary to explore the dimension of equality in children's friendships.

Second, equality is believed to be a fundamental component of children's friendships, which accounts for their significance in social and cognitive development. Therefore, it is necessary to study the correlates of asymmetrical friendships. Are children in such relationships at risk for developmental or adjustment problems? Although this question cannot be answered in the present study, the results will help determine if this question should be pursed in future longitudinal studies. If, for example, asymmetrical friendships are lower in overall quality than symmetrical friendships, children in these friendships may not experience adequate opportunities for development.

Third, this research will be on friendships in preadolescence because friendships at this age are essential for identity formation and the development of interpersonal skills (Parker & Gottman, 1989; Hartup, 1996). Asymmetrical friendships in preadolescence may have a more negative impact than earlier in development. For these reasons, it is necessary that asymmetries in

preadolesecnt friendships be examined.

Method

Participants

The participants of this study were 138 children comprising 34 male and 35 female same-sex friend dyads. The participating children ranged in age from 9 to 12 years (M = 10.24 years; SD = .50). In order to answer the questions proposed in the larger study, participants were selected to represent a range of children with aggressive, withdrawn and average behavioural characteristics. Using the Revised Class Play (Masten, Morison, & Pellegrinni, 1985) children were classified into four groups: aggressive, withdrawn, average and aggressive/withdrawn. Approximately 68% of the children's biological mothers and fathers were married at the time of the study. The children's demographic characteristics are further described in Table 1. The demographic characteristics of the participating children's biological mothers and fathers, including ethnicity and education, are presented in Table 2.

Table 1

Demographic Characteristics of Participating Children

Variables	n	%
Sex		
Male	68	49.3
Female	70	50.7
Number of Siblings		
1	60	43.5
2	43	31.2
3	13	9.4
4	3	2.2

Note. The number of respondents does not always sum to 138 because of missing data.

Table 2

Demographic Characteristics of Participating Children's Biological Mothers and Biological Fathers

Variables	Mothers		Fathers	
	n	%	n	%
Education				
Elementary School	1	0.7	4	2.9
High School	8	5.8	12	8.7
Vocational School	6	4.3	5	3.6
Some College	30	21.7	21	15.2
University Degree	32	23.2	35	25.4
Some Graduate School	11	8.0	7	5.1
Graduate Degree	40	29.0	34	24.6
Other	1	0.7	3	2.2
Ethnicity				
White	84	60.9	83	60.1
Latino/Hispanic	9	6.5	5	3.6
Black	22	16.0	24	17.4
Asian	11	8.0	10	7.2
Other	5	3.6	3	2.2
Martial Status (Mother and Father)				
Married	94	68.1		
Separated	5	3.6		
Divorced	16	11.6		
Common Law	2	1.4		
Single	10	7.2		
Other	2	1.4		

Note. The number of respondents does not always sum to 138 because of missing data

Procedure

Recruitment

The present study is part of a larger study[1] designed to investigate the role of children's friendships and mother-child relationships during the transition from elementary school (grade five) to middle school (grade six). Approval by Brock University's Research Ethics Board was obtained for the study. The participants for this study were recruited from four representative elementary schools within the Montgomery County (MD) Board of Education system in Maryland. Home classroom teachers gave the grade 5 students a permission letter to bring home for parental consent to participate in the classroom and laboratory phases of the study. Upon receipt of the signed permission letters, all parents were contacted, by phone, to arrange laboratory phases of the study. During the telephone conversations with the mother, the laboratory procedures were described in full detail. Classroom assessments were administered only to those children for whom parental permission had been obtained. Eighty-six percent of parents ($N = 557$) who returned the questionnaire gave consent to be included in the study. There were 24 parents who did not return the consent from.

Questionnaires

During the fall (1999) and spring (2000) terms of grade five, children completed a set of group-administered questionnaires in their classrooms. The questionnaires were designed to identify the children's best friends in the school and the extensivity of their friendship networks.

Child-Friend Laboratory Sessions (Spring grade five)

Upon arrival at the laboratory, children and parents were given an overview of the procedure. The child-friend activities were conducted in a playroom equipped with two motion-detecting video cameras and two one-way mirrors. The children were told that they would be

videotaped.

At the start of the child-friend activity session, friend pairs were brought into the playroom and told to play with whatever they want. The playroom contained materials for arts and crafts and games such as hockey, basketball, ping-pong, Jenga, etc. The dyad was left alone for 10 mins of free play. After the free play session, children were asked to discuss the best time they had as friends (5 mins), given a moral dilemma discussion task (10 mins), followed by an origami activity (10 mins), and finally asked to plan a weekend together (10 mins). Only the origami task will be discussed in the present study.

In the origami task, children were presented with three paper models and instructions for each. Children were asked to choose one model and work together to finish it. The dyad was given two pieces of origami paper and told they could start a second model if they finished one before the experimenter returned. The dyad was left alone for 10 mins and videotaped. The child-friend origami session was later coded on several dimensions.

Following the above described procedure, children were given a number of questionnaires, including the Friendship Quality Questionnaire-Revised, to complete with the assistance of an experimenter. The details of the instructions for the child-friend visit in Appendix A.

Friendship Measures

A summary of all the measures used in this study is presented in Table 3. Friendship status and friendship quality were assessed using self-reports. Video coding was used for the two measures of asymmetry. A global coding scheme was used to directly measure balance of power. Dyadic differences in social problem solving attempts were also used as a measure of asymmetry. All measures yielded dyadic and individual values. A summary of age and sex correlations with each measure used in this study is presented in Table 4.

Table 3

Summary of Measures

Measure	Procedure	Level of Analysis	Behaviour Measured
Friendship Status	Class Nominations	Individual/Dyadic Differences	Group Acceptance
Friendship Quality Questionnaire (FQQ)	Self-report Questionnaire	Individual/Dyadic	Friendship Features: Companionship/ Recreation; Validation /Caring; Help/ Guidance; Intimacy; Conflict Resolution; Conflict/Betrayal Overall Friendship Quality
Child Social Problem-Solving (SPS)	Video Coding	Individual: non-absolute value of the difference between percentage of successful attempts, non-absolute value of the difference between total frequency of attempts Dyadic: absolute value of the difference between percentage of successful attempts, absolute value of the difference between total frequency of attempts	Observed initiations, strategies outcomes, affect, proximity, and orientation Inferred balance of power
Global Observational Coding - balance of power (GOC)	Video Coding	Dyadic: overall end code average of minute ratings Individual: relative power code	Observed rated balance of power (3-point scale)

Table 4

Summary of Correlations Between all Measures and Child/Dyad Sex and Age

Measures	Child/Dyad Sex	Child Age
Friendship Status (individual)	0.284**	-0.066
FQQ overall quality (individual)	0.290**	-0.133
GOC individual power (individual)	-0.125	0.101
GOC overall end code (dyadic)	0.166	
GOC average mean ratings (dyadic)	0.151	
SPS percent success (individual)	0.053	0.109
SPS total frequency (individual)	-0.04	0.058
SPS non-absolute value of the difference percentage success power (individual)	0.046	0.301*
SPS non-absolute value of the difference total frequency power (individual)	0.111	0.09
SPS absolute value of the difference between percentage success asymmetry (dyadic)	-0.063	
SPS absolute value of the between total frequency asymmetry (dyadic)	-0.309*	

Note. Correlations could not be computed between age and the dyadic measures.
n varies from 55 to 131 depending on measure, *$p < .05$, ** $p < .01$ (two-tailed)

Friendship Units/ Friendship Status. (Bukowski, Hoza, & Newcomb, 1994). Each child was asked to nominate his or her very best friend in their grade. Children were next asked to nominate a second best friend and then provide the name of every child in the same grade who they considered a friend. Two children formed a friendship dyad if they received reciprocal nominations (within the first five friends nominated).

The measure of children's friendship status was taken from the first five friend nominations made by each child. Children who each named one another in the nominations were considered mutual friends. Thus, the friendship status for each child was determined by the total number of mutual friend nominations, which could range form 1 to 5. The absolute value of the difference between the number of mutual friend nominations received by each child within the dyad was calculated. This score was used to represent dyadic differences in friendship status and ranged from 0 to 3 ($M = 1.16$, $SD = .95$).

Friendship status was significantly related to child sex (see Table 4). On average, girls had a greater number of mutual friend nominations than boys. Friendship status was unrelated to age (see Table 4) or any other demographic variables.

Friendship Quality Questionnaire-Revised. (FQQ; Parker & Asher, 1989). The FQQ is a 5-point Likert-type questionnaire with 40 items measuring the child's quality of friendship with his or her friend (see Appendix B1) The questionnaire yields six sub-scale scores in the areas of companionship/ recreation, validation/caring, help/guidance, intimate disclosure, conflict resolution, and conflict/betrayal. The alpha coefficients for the FQQ in the present study are presented in Table 5. The FQQ was used to assess the overall dyadic quality of each friendship by averaging the responses of each child in the dyad for each sub-scale. The conflict and betrayal sub-scale was reversed scored so

that higher scores represented less conflict relative to low scores. To obtain an overall friendship quality score, the dyadic scores for each of the 6 sub-scales were standardized and then summed.

The dyadic responses on the friendship quality questionnaire were significantly related to dyad sex on all scales except the companionship and recreation sub-scale (see Table 5). In general, boys reported lower scores than girls. Means and standard deviations for each of the sub-scales on the FQQ and overall quality are presented in Table 5.

The FQQ also was used to assess the individual perceptions of each friendship. For each FQQ sub-scale the individual responses of children within the same dyad were significantly correlated. The correlations ranged form .326 to .548. Child sex was significantly related to individual overall friendship quality (see Table 4). Boys, on average had lower quality friendships than girls. Child age was not related to overall friendship quality (see Table 4)

There was only one significant relationship between the sub-scales on the FQQ and all other demographic variables. The child's mother's ethnicity was significantly related to the feature of conflict frequency. Children who had mothers of white ethnicity reported lower frequencies of conflict and betrayal on the FQQ than children who had mothers of non-white ethnicity ($\underline{F}_{(1,129)} = 8.05$, $\underline{p} = .005$).

Table 5

FQQ Alpha Coefficients and Dyadic Mean Scores for FQQ Sub-Scales by Dyad Sex

	FQQ Companion/ Recreation	FQQ Validation/ Caring	FQQ Help/ Guidance	FQQ Intimate Disclosure	FQQ Conflict Resolution	FQQ Absence of Conflict/ Betrayal	FQQ Overall Quality (sum of standardized values)
Alpha Coefficient	0.6314	0.8596	0.8754	0.851	0.5475	0.723	0.8535
Male							
M	3.67	4.00**	3.46**	3.13***	3.85**	4.09*	-1.47
SD	0 .71	0.56	0.68	0.76	0.68	0.50	4.54
n	34	34	34	34	34	34	34
Female							
M	3.78	4.35**	3.86**	3.85***	4.26**	4.26*	1.66
SD	0.76	0.44	0.71	0.79	0.59	0.60	4.27
n	30	30	30	30	30	30	30
Total							
M	3.72	4.17	3.64	3.46	4.04	4.17	.00
SD	0.72	0.53	0.72	0.85	0.67	0.64	4.66
n	64	64	64	64	64	64	64
$t_{(1, 136)}$	-.917	-2.900	-2.713	-4.618	-2.727	-1.984	-2.827
p	.361	.004	.008	.000	.007	.049	.006

Note. Asterisks indicate values that differ significantly, *p < .05, ** p < .01, ***p < .001 (two-tailed)

Asymmetry Measures

In the present study, friendship asymmetry was assessed in two general ways. The first group of measures of asymmetry were based on the global observational coding scheme (GOC). The second group of measures of asymmetry were based the social problem solving (SPS) coding scheme. Two-tailed probability was used for all analyses of the asymmetry measures.

Global Observational Coding (balance of power) - modified. (GOC; Kerns et al., 1996). The GOC was intended to be an exploratory measure of dyadic asymmetry. The GOC was planned to be used only if it was highly correlated with the SPS measures. In the original use of the GOC, the dynamics of the dyad were rated on a 3-point scale after watching an entire 10-min conversation segment. In this study balance of power during the origami task was assessed using an expanded version of the GOC (see Appendix B2). Because the dynamics of the dyad were likely to change over the course of the origami session, dyadic balance of power was rated for every minute of interaction during the session on a 3-point scale, ranging from 1 = one dyad member clearly more dominant (asymmetrical) to 3 = even balance of power (symmetrical). In addition, a global rating at the end of the task was made. The overall dyad ratings were made on a 3-point scale as described above, with a fourth code for equal asymmetry. A code for equal asymmetry was given when both children made relatively equal attempts to control the dyad or when the balance of power swayed between children.

Thus, the GOC yielded two final ratings of asymmetry for each friendship dyad, a final overall score and a mean score based on the minute ratings. The mean overall end score was 2.32 (SD = .75). Dyadic overall end scores were not significantly related to dyad sex (see Table 4).

The average mean asymmetry rating was 2.46 (SD = .46). The average mean ratings were not significantly related to dyad sex (see Table 4). The two final scores were very strongly correlated (r = .907, p <.001).

In asymmetrical dyads, the rater also indicated which child was dominant. Based on the 3-point dyadic scale, there were 5 possible individual scores that could be obtained (1 = very dominant, 2 = somewhat dominant, 3 = equal, 4 = somewhat non-dominant, 5 = very non-dominant). The average of individual power scores was 3.43 (SD = 1.82). Individual power scores were not significantly related to child sex, age, (see Table 4) or any other demographic variables.

Inter-rater reliability between two coders was established before video coding began. To ensure the stability of ratings, 20% of the tapes were selected at random and coded by each observer. Reliability tapes were coded for every 5 or 6 tapes coded to guard against potential observer drift. The observed kappa coefficient for this coding system was .8290 (p < .001) (Hollenbeck, 1978). There was 90% inter-rater agreement.

Child Social Problem-Solving. (SPS; Adapted from Rubin & Krasnor, 1986). SPS attempts were defined as socially-oriented initiations which one person uses to influence another person (see Appendix B3). For each SPS attempt, social goals, strategies used to achieve the goal, outcome of the attempt, affect of initiator, proximity of initiator to target, and orientation of initiator were recorded. All SPS attempts during the origami task were coded for each child separately. Tables 6, 7, and 8 summarises the SPS coding scheme for goal, strategy and outcome codes and presents frequencies for each code.

Three trained observers coded the video tapes. Inter-rater reliability was established before video coding began. To ensure the stability of ratings, 20% of the tapes were selected at random and coded by two observers. Reliability tapes were coded for every 5 or 6 tapes coded to guard against potential observer drift. The kappa statistic was calculated to measure inter-rater reliability for each of the coding categories (Hollenbeck, 1978). All kappa values were statistically significant indicating agreement between independent raters (See Tables 6, 7 and 8).

The aggregation of the observational data provided a total frequency of SPS initiations for each child, as well as the relative frequency of each code. The total frequency of SPS attempts ranged from 4 to 42 ($\underline{M}$ = 19.88, $\underline{SD}$ = 8.26). The percentage of successful attempts made by each child was also calculated. The percentage of successful attempts ranged from 19.05% to 100% ($\underline{M}$ = 59.46, $\underline{SD}$ = 17.94). These values were not significantly correlated with child sex or age (see Table 4).

The SPS measure yielded three asymmetry scores for each friendship dyad[2]. The first dyadic score, percentage success score, was based on the absolute value of the difference between the percentage of successful social problem solving attempts made by each child in the dyad. Thus, the more asymmetrical the dyad, the greater the difference score. The mean difference between percentage success score was 17.70 ($\underline{SD}$ = 13.60). The values ranged from 1.19 to 63.64. SPS percentage success asymmetry was unrelated to dyad sex (see Table 4)

The second dyadic score, total frequency of attempts score, was based on the absolute value of the difference between the total frequency of social problem solving attempts made by each child in the dyad. The mean difference between SPS total frequency score was 9.56 ($\underline{SD}$ =

7.33). The values ranged from 0 to 30. The correlation between the percentage success score and total frequency score was insignificant (r = .020, p = .881). SPS total frequency was significantly related to dyad sex (see Table 4). Boys, on average, had a greater difference between their total frequency of SPS attempts within the dyad.

Both measures, SPS precent success and SPS total frequency, were used in hypotheses testing since they may represent different types of asymmetry. The absolute value of the difference between the percentage of successful SPS attempts made by each friend indicates that one child may be having more influence overall. However, this measure does not account for differences in the total number of attempts made to influence. Thus, the absolute value of the difference between total frequency SPS attempts made by each friend was also used as an indicator of dyadic balance of power. The difference between total frequency of SPS attempts does reflect the fact that one child is trying to dominate the dyad.

As an index of relative individual power, the non-absolute value of the difference between children within the dyad was calculated, using the two SPS measures. The focal child (determined in the larger study) from each dyad was chosen to represent the pair because the relative power scores were dependent on each other. A positive score indicated greater relative power; a negative score less relative power.

One measure of relative power was represented by the non-absolute value of the difference between the percentage of successful SPS attempts for each child within the dyad. The non-absolute value of the difference between successful SPS attempts within dyads ranged from -64 to 48 (M = 0.49, SD = 2.93). This individual success measure was not related to child sex (see Table

4). However, the non-absolute value of the difference between the percentage of successful SPS attempts was significantly related to age (see Table 4). The older the child, the greater the individual power score. This measure was unrelated to any other demographic variables

Relative power was also represented by the non-absolute value of the difference between total frequency of SPS attempts for each child within the dyad. The non-absolute value of the difference between total frequency of SPS attempts within dyads ranged form -30 to 21 ($\underline{M}$ = -0.44, $\underline{SD}$ = 12.10). The individual total frequency measure was not related to child sex or age (see Table 4). This measure was unrelated to any other demographic variables. The two measures of individual relative power were not significantly correlated ($\underline{r}$ = -.216, $\underline{p}$ = .10).

Table 6

SPS Measure Summary of Goal Codes

Goal Code	Definition (any attempt used to influence friend)	Example	Average % (SD)	Percent Agreement	Kappa
Elicit Action	target physically engage in some activity	"go over there"	3.65(4.92)	85.25	0.8179 $p < .001$
Elicit Action-self	grant permission to do something themselves	"can I knock on the door?"	1.77(3.77)		
Object Acquisition	acquire control of an object in possession of friend	"may I have the toy"	8.93(7.98)		
Joint Action	initiate social play or joint activity	"let's play hockey"	15.00(10.02)		
Play Solitary	leaves joint activity to play alone	"I am doing something else"	.920(2.64)		
Prosocial	share or give assistance	"here, this is how it should be"	28.99(18.54)		
Attention	get the attention of friend	"look at the camera"	12.40(9.95)		
Information	acquire information not related to task	"what time is it?"	4.32(5.97)		
Assistance	gain help, comfort or instruction from friend	"can you help me with this part?"	12.91(11.86)		
Stop Action	friend cease doing some activity	"don't do that"	9.12(8.58)		
Unknown/ Other	not codeable elsewhere		0		

Table 7

SPS Measure Summary of Strategy Codes

Strategy Code	Definition	Example	Average % (SD)	Percent Agreement	Kappa
Aggressive-physical	physical aggression with any other strategy	pushing friend away from origami	.120(.660)	82.9	0.7773 $p < .001$
Aggressive-verbal	verbal aggression with any other strategy	"don't do that - you fool!"	.132(.838)		
Incentives-positive	bribes to gain compliance	"if you give that to me I will give you my drink"	.022(.248)		
Incentives-negative	threats of retribution for non-compliance	"fold it like that or I will hit you"	0		
Questions	asks a question	"what colour is that?	10.01(11.66)		
Indirect Request	directed declarative, suggestions, interrogatives or implied requests	"let's use this one"	36.43(11.63)		
Command	imperative to issue a direct request	"give that back"	13.42(7.34)		
Non-verbal Gestures	any action that carries communicative intent	puts finger to lips in request to be quiet	21.29(7.53)		
Non-verbal Reaching/Grabbing	touching or taking anything in the possession of friend.	grabs origami model from friend	13.12(8.53)		

Unknown/Other	strategy not codeable elsewhere, or cannot be heard	6.04(7.26)

Table 8

SPS Measure Summary of Outcome Codes

Outcome Code	Definition	Example	Average % (SD)	Percent Agreement	Kappa
Success	complies within 10 seconds without further involvement	if goal attention: friend looks or watches	57.38(19.59)	80.5	0.6941 $p < .001$
Partial Success	partially complies	"OK, I will do it in later"	13.03(11.88)		
Rejection	refuses to comply	"no, that's wrong"	17.19(16.43)		
Self-solution	initiator achieves the goal by his/herself	initiator shuts door him/herself after asking friend to close it	3.53(4.49)		
No Response	does not respond within 10 seconds	does not look up or acknowledge request	5.63(6.83)		
Unknown	outcome cannot be determined	another attempt is made immediately following first attempt and friend does not have time to respond	2.59(4.34)		

Data Aggregation and Analytic Strategy

A Comparison Between the GOC and SPS Dyadic Measures of Asymmetry

As planned, a first order correlation analysis was performed to determine the relationship between the GOC and SPS measures of dyadic asymmetry. As indicated in Table 9, there were no significant correlations between any of the SPS and GOC measures.

Table 9

Correlations Between the SPS and GOC Dyadic Asymmetry Measures

	SPS Absolute Value of the Difference Percent Success	SPS Absolute Value of the Difference Total Frequency	GOC Mean	GOC Overall
SPS Absolute Value of the Difference Percent Success	1	0.020	-0.063	-0.229
SPS Absolute Value of the Difference Total Frequency	--	1	0.153	0.062
GOC Mean	--	--	1	0.907***
GOC Overall	--	--	--	1

Note. n varies from 54 to 59, depending on available data
***p <0.001

Prior to data collection it was determined that only one type of friendship asymmetry measure would be used for hypothesis testing. Because the GOC measure was not highly correlated with the SPS measure, it was decided to use only the SPS measure. The SPS coding scheme is a well established measure that has been used under varying conditions (Rubin & Rose-

Krasnor, 1992). Thus, for the purposes of hypothesis testing, only the two SPS measures of asymmetry will be retained. Two-tailed probability values were used for all analyses.

A Comparison Between the GOC and SPS Individual Power Measures

As planned, a correlation analysis was preformed to determine the relationship between the GOC and SPS individual power measures. As indicated in Table 10, both SPS measures were significantly correlated with GOC individual power. There was a negative correlation between GOC individual power and the SPS non-absolute value of the difference between percentage of successful attempts. However, there was a positive correlation between the GOC individual power and the SPS non-absolute value of the difference between total frequency of SPS attempts. The individual GOC power scores will also not be used in hypothesis testing because it was decided that only one measure of power would be used. The GOC was an exploratory measure only. The opposite direction of the correlations between this measure and the two SPS power measures is not understood and needs to be addressed.

Table 10

Correlations Between the SPS and GOC Individual Power Measures

	SPS Non-Absolute value of the difference Percent Success	SPS Non-Absolute Difference Total Frequency	GOC Individual Power
SPS Non- Absolute value of the difference Percent Success	1	-0.216	-0.349**
SPS Non- Absolute value of the difference Total Frequency	--	1	0.277*
GOC Individual Power	--	--	1

Note. $n = 59$, $^{**}p < 0.01$, $^{*}p < 0.05$

Results

Asymmetry in Friendship Dyads

The premise of the present study was that asymmetry is a variable component of children's friendships. Prior to hypothesis testing, it was determined that considerable variation in the asymmetry measures existed. The distributions, skewness and kurtosis values were examined for each measure of asymmetry. Skewness measures asymmetry of distributions, or the extent to which scores tend to fall at extreme ends of the range. Kurtosis measures the "peakedness" of distributions, or the extent to which scores cluster around the mean (Hopkins & Wells, 1990). The distributions of each measure of asymmetry were classified according to Hopkins & Wells' (1990)

five skewness-categories that ranged from slight(γ= .33) to very extreme skewness (γ=1.88). In order to test the departure of the distributions from normal, z-scores were computed for the skewness and kurtosis values. The larger the z-score the greater the deviation from a normal curve. Therefore, a significant z-score ($p < .01$ or .001) indicates the distribution is significantly different from normal (Tabachnick & Fidell, 1989). The following formulas, provided by Tabachnick and Fidell (1989), were used to transform skewness and kurtosis into z-values.

$$Z \text{ skew} = \text{skew} - 0 / SE(\text{skew})$$

$$Z \text{ kurtosis} = \text{kurtosis} - 0/SE(\text{kurtosis})$$

Global Observational Coding Measure

The frequency distributions of the GOC overall dyadic asymmetry codes and the GOC mean dyadic asymmetry scores are depicted in Figures 1 and 2, respectively. The majority of the dyads were categorized as equal. However, somewhat asymmetrical dyads and very asymmetrical dyads together describe roughly half of the friendships (see Figure 1). The mean overall end code was 2. 32 (SD = .753). The median value of the distribution was 2.0. The skewness was -.616 (SE = .311) and the kurtosis value was .967 (SE = .613). The values indicate some departure from a normal distribution. According to Hopkins & Wells' categories, the distribution for the overall end code would be considered 'moderately' negatively skewed. The z-score for skewness was -1.981 ($p = .023$) . The z-score for kurtosis was 1.577 ($p = .061$). According to the alpha levels proposed by Tabachnick and Fidell (1990), the distribution does not differ significantly from normal.

The frequency distribution of scores for the average mean asymmetry ratings is presented in Figure 2. The average mean asymmetry rating was 2.46 (SD = .461) and the median value was

2.58. The skewness of the distribution was -.816 (SE = .299) and the kurtosis was -.298 (SE = .590). The distribution is 'moderately' negatively skewed (Hopkins & Wells, 1990). The z-score for skewness was 2.73 (p = .003). The z-score for kurtosis was .505 (p = .305). The distribution is skewed but the kurtosis of the distribution represents a normal curve.

Figure 1. Frequency distribution of overall end GOC dyadic asymmetry scores

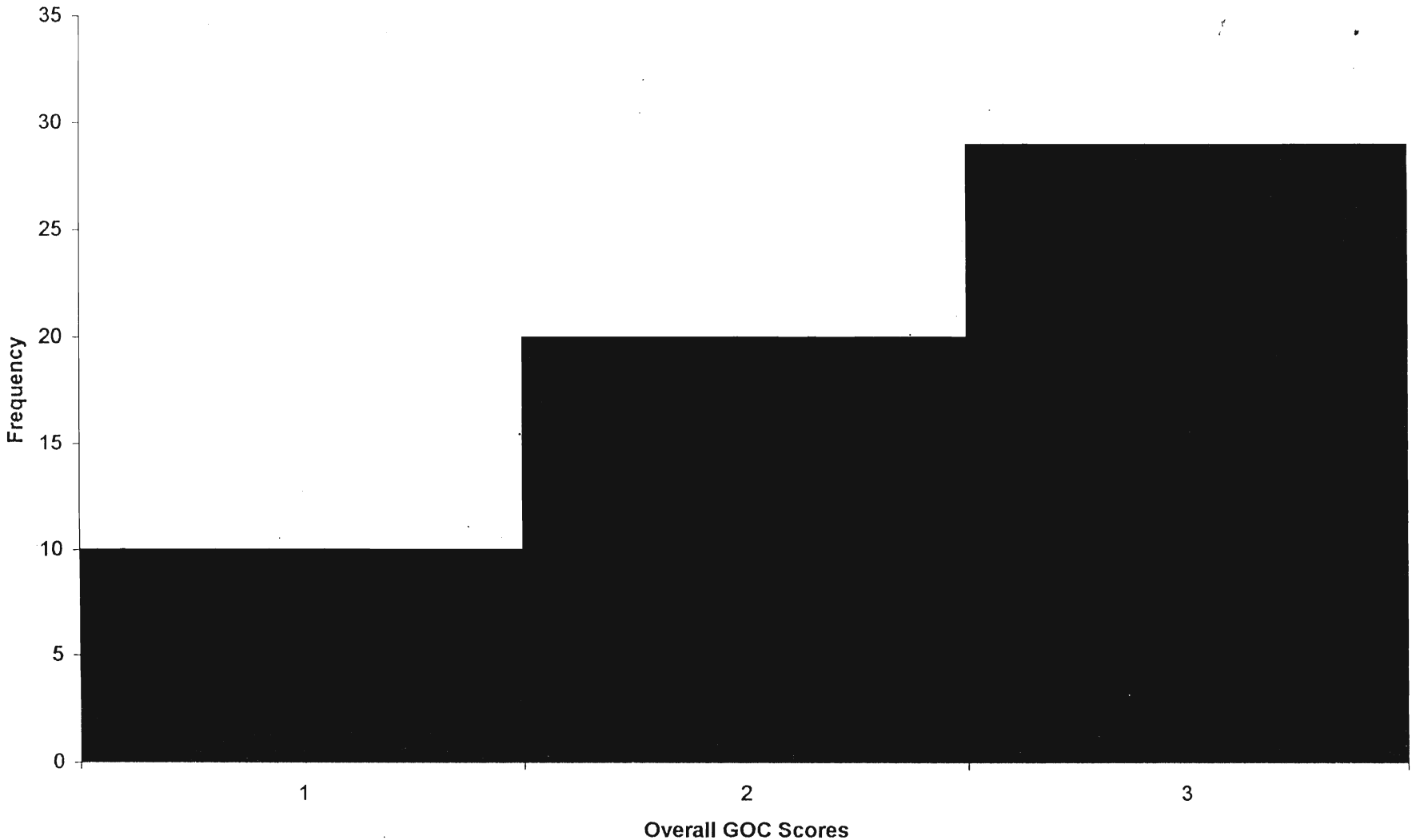
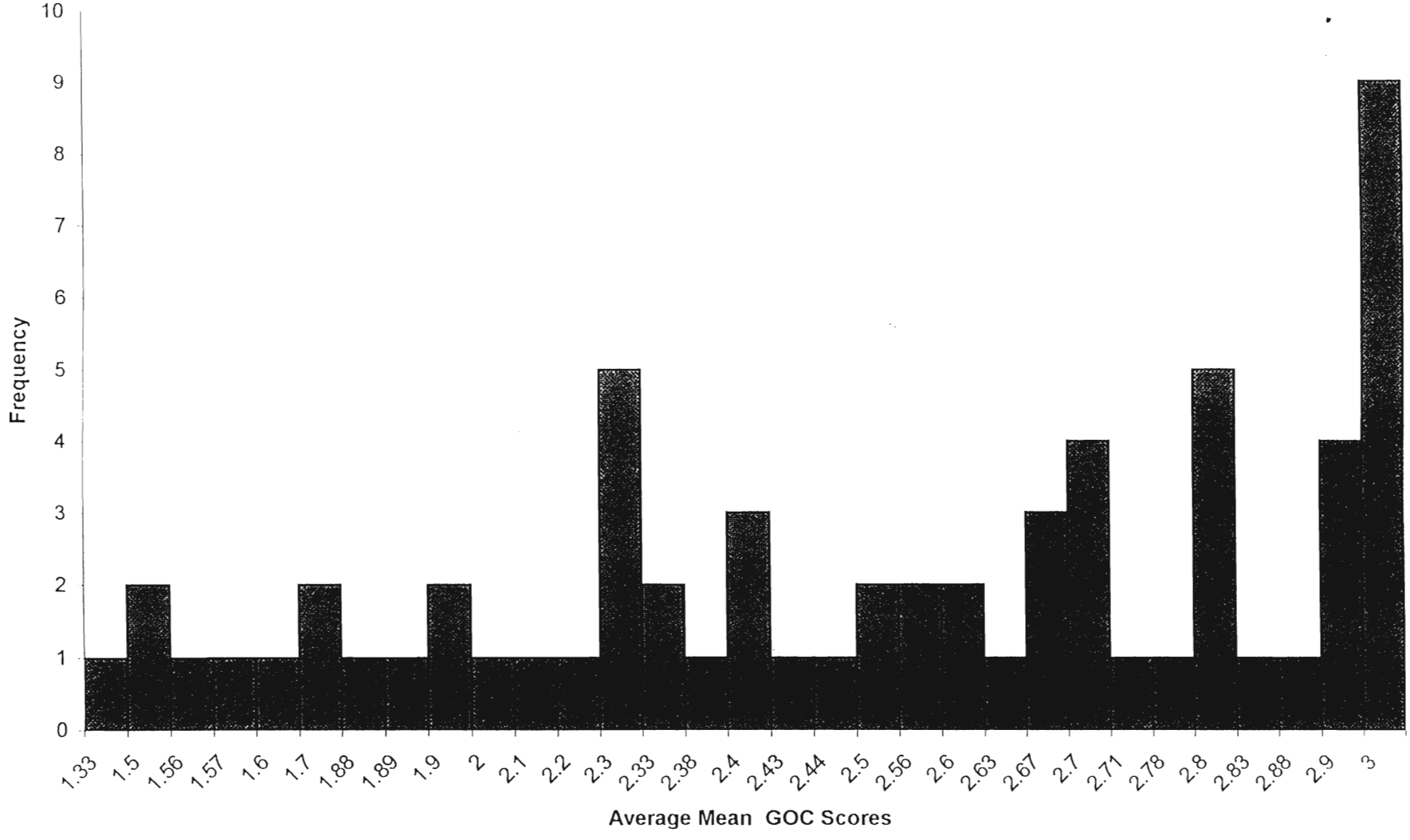


Figure 2. Frequency distribution of average mean GOC dyadic asymmetry scores



Social Problem Solving Measure

The frequency distribution of SPS percentage success dyadic asymmetry is presented in Figure 3. The distribution of SPS success scores was distributed around the median value (14.67). The skewness of the distribution was 1.12 (SE = .311) and the kurtosis was 1.21 (SE = .613). The distribution is 'substantially' positively skewed (Hopkins & Wells, 1990). The z-score for skewness was 3.60 ($p < .001$). The z-score for kurtosis was 1.973 ($p = .024$). Although the distribution differs significantly from normal in terms of skewness, the kurtosis of the distribution is close to normal.

The frequency distribution of SPS total frequency dyadic asymmetry is presented in Figure 4. The median value of the distribution was 8.0. The skewness of the distribution was .771 (SE = .311) and the kurtosis was .123 (SE = .613). The distribution is 'moderately' positively skewed (Hopkins & Wells, 1990). The z-score for skewness was 2.48($p = .007$). The z-score for kurtosis was .201($p = .421$). This distribution differs significantly from normal in terms of skewness but not for kurtosis.

Summary of Evidence for Asymmetry in Friendship Dyads

In general, the distributions of all asymmetry measures are skewed in the direction of scores that represent equality. As expected, the majority of dyads were relatively equal. However, there was also substantial evidence of variation in the asymmetry feature. For the most part, the distributions of asymmetry approximate normal.

Figure 3. Frequency distribution of SPS percentage success dyadic asymmetry scores

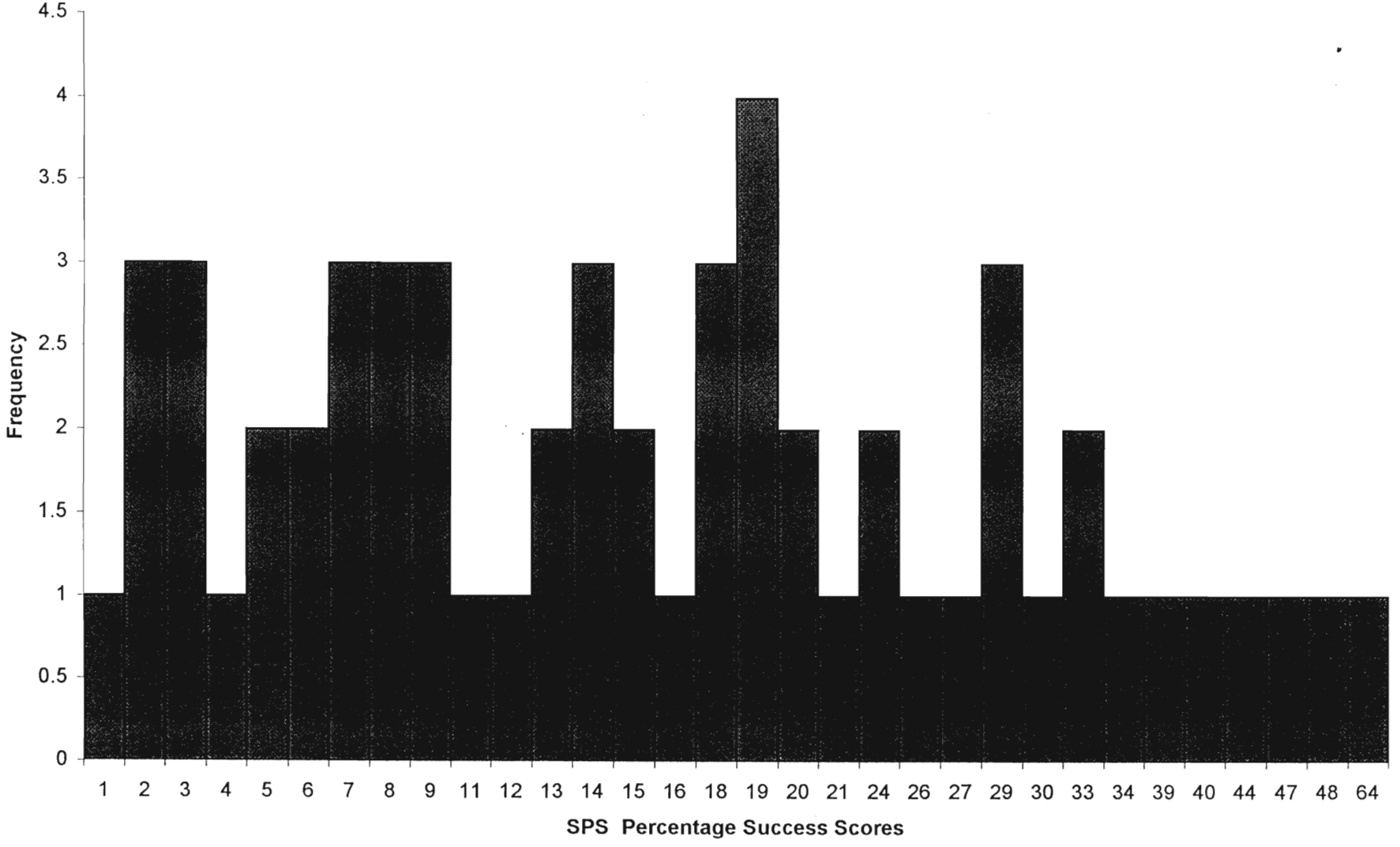
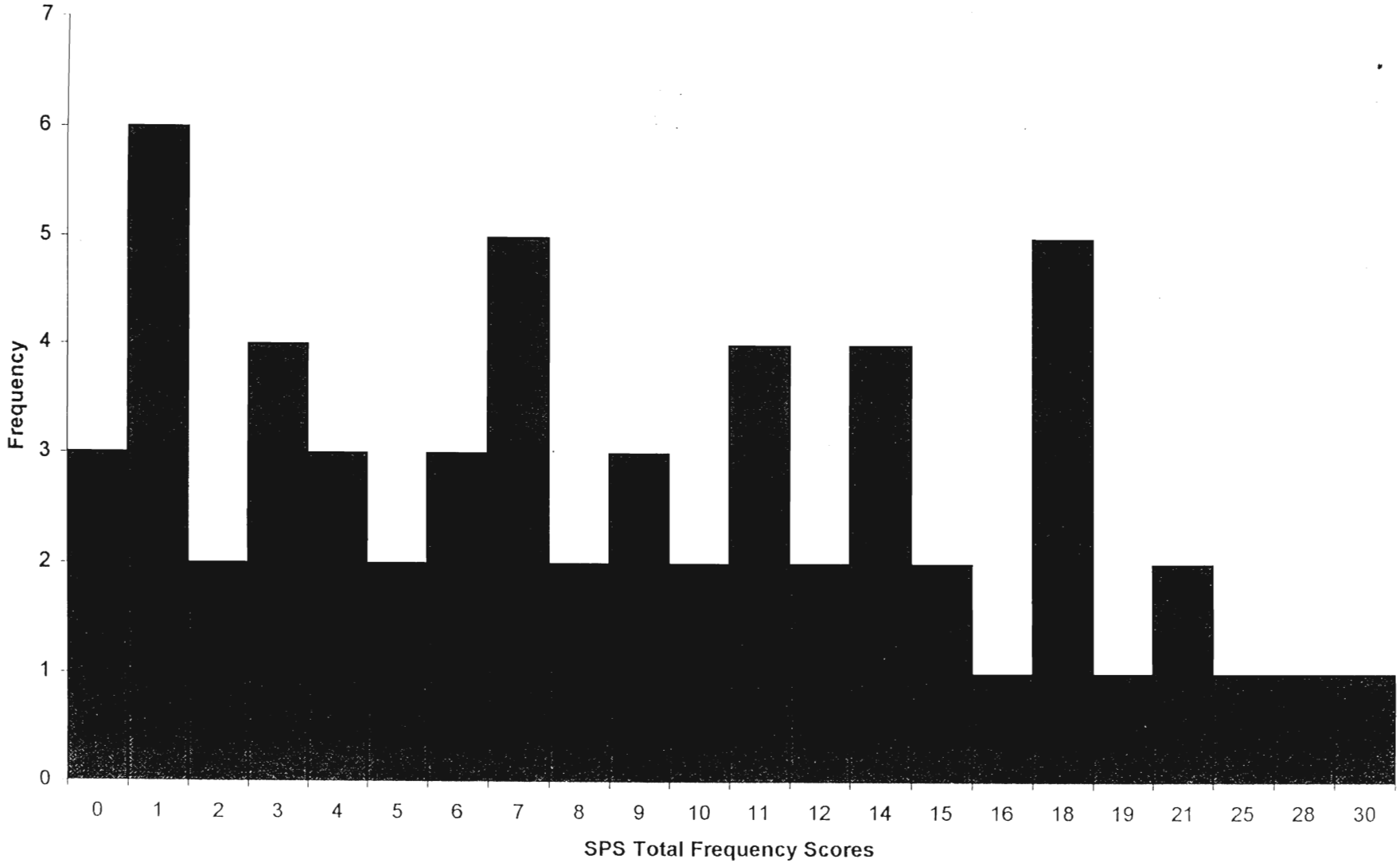


Figure 4. Frequency distribution of SPS total frequency dyadic asymmetry scores



. Hypothesis One: On average, boy's friendship dyads will, on average, be more asymmetrical than girls' friendship dyads

It was predicted that on average boys' friendship dyads would be more asymmetrical than girls' friendship dyads. Higher SPS asymmetry scores indicate a larger difference between the SPS attempts of each child within the dyad relative to lower scores. The mean asymmetry scores are presented in Table 11. For both the success and total frequency asymmetry scores, boys' friendship dyads had higher mean scores than girls' friendship dyads, indicating greater asymmetry for boys. Gender differences were tested by correlational analysis in which sex of the dyad was coded 1(male) and 2 (female).

A first order correlation was performed to determine if SPS percentage success asymmetry was related to dyad sex. There was no significant correlation between sex of the dyad and SPS percentage success asymmetry ($r = -.063$, $p = .637$).

A first order correlation was also performed to determine if SPS total frequency asymmetry was related to dyad sex. There was a significant negative correlation between sex of the dyad and SPS total frequency asymmetry scores ($r = -.309$, $p = .017$). Boys, on average, had a greater difference between their total frequencies of SPS attempts within the dyad than girls.

Summary of Evidence for Hypothesis One

In general, there was adequate support for the hypothesis that boy's friendship dyads would be more asymmetrical than girls' friendship dyads. Although gender differences in SPS percentage success measure were statistically insignificant, the means were in the expected direction. Furthermore, the predicted relationship was found between sex of the dyad and dyadic asymmetry using the SPS total frequency measure.

Table 11

Mean Scores for SPS Difference Percentage Success and SPS Difference Total Frequency by Dyad Sex

	SPS Difference Percentage Success Score	SPS Difference Total Frequency Score
Male		
M	18.53	11.77
SD	14.25	8.80
n	30	30
Female		
M	16.84	7.28
SD	13.08	4.53
n	29	29
Total		
M	17.70	9.56
SD	13.60	7.33
n	59	59

Hypothesis Two: Differences in Friendship Status Within Friendship Dyads Will Be Positively Correlated With Asymmetry in Friendship Dyads

The second hypothesis was that differences in friendship status within dyads would be positively related to dyadic asymmetry. The measure of friendship status was taken from the five friend nominations made by each child. Children who named each other were considered mutual friends. For each dyad, the absolute value of the difference between total numbers of mutual friend nominations for each child was calculated to represent the score for difference in friendship status.

In order to test the hypothesis that differences in friendship status would be related to dyadic friendship asymmetry, first order correlations were computed. As indicated in Table 12, differences in friendship status were not correlated significantly with either the SPS percentage

success or SPS total frequency measures. Therefore, there was no support for the second hypothesis.

Table 12

Correlations Between the SPS Dyadic Asymmetry Measures and Dyadic Friendship Status Differences

	SPS Difference Percentage Success	SPS Difference Total Frequency	Friendship Status Difference
SPS Difference Percentage Success	1	0.020	-0.074
SPS Difference Total Frequency	--	1	-0.092
Friendship Status Difference	--	--	1

Note. n varies from 59 to 64, depending on available data

Hypothesis Three: Dyadic Asymmetry will be Negatively Correlated With Dyadic Positive Friendship Quality

The third hypothesis was that asymmetry in friendship dyads would be negatively correlated with dyadic positive friendship quality, as measured by the six sub-scales on the Friendship Quality Questionnaire (FQQ). The six sub-scales measured the friendship features of: companionship/recreation, validation/caring, help/guidance, intimate disclosure, conflict resolution, and conflict/betrayal. For each sub-scale on the FQQ, the individual responses of each child in the dyad were averaged to provide dyadic scores for each scale. The dyadic scores for each of the 6 sub-scales were standardized and then summed to represent an overall friendship quality score.

It was predicted that dyadic asymmetry would be negatively related to overall friendship quality. A first order correlation was used to test this hypothesis for the SPS percentage success measure. The SPS percentage success measure of dyadic asymmetry was not correlated significantly with overall friendship quality (r = .061, p = .645).

This hypothesis was also tested for the SPS total frequency measure of asymmetry. Because a significant relationship existed between child sex and the SPS total asymmetry measure, a hierarchical regression analysis was used to partial out the effect of sex. On the first step of the analysis, dyad sex was entered. On the second step, SPS total frequency asymmetry was entered. As indicated in Table 13, SPS total frequency asymmetry significantly predicted overall friendship quality after controlling for child sex. Furthermore, the relationship between SPS total frequency dyadic asymmetry and overall dyadic friendship quality was negative, as predicted. Thus, the hypothesis was supported for the SPS total frequency asymmetry measure but not for the SPS percentage success asymmetry measure.

Table 13
Hierarchical Multiple Regression Using The SPS Total Frequency Asymmetry Scores as a Predictor of FQQ Overall Friendship Quality

Criterion: FQQ Overall Quality

Variables	β	R^2	$R^2\Delta$	FΔ	df
Steps					
1. Sex of Dyad	0.347	0.120	0.120	7.77**	1, 57
2. SPS Difference Total	-0.253	0.178	0.058	3.94*	2, 56

Note. R^2 Total = .178, F (3,56) = 6.064, p = 0.004, **p <0.01, * p < .05

Summary of Evidence for Hypothesis Three

In general, there was mixed support for the hypothesis that asymmetry in friendship dyads would be negatively correlated with dyadic positive friendship quality. The SPS percentage success score was not related to quality. However, the SPS total frequency asymmetry score was negatively related to overall friendship quality, as predicted.

Hypothesis Four: Asymmetry in Children's Friendship Dyads will be Negatively Correlated with Dyadic Validation/Caring, Help/Guidance, Intimate Exchange, and Conflict Resolution. Asymmetry Will Not be Correlated with Companionship/Recreation

It was hypothesised that asymmetrical friendships would be lower in dyadic validation and caring, help and guidance, intimate disclosure and conflict resolution, as measured by these FQQ sub-scales, than symmetrical friendships. No relationship was predicted for the companionship/ recreation sub-scale because there was no evidence to suggest a link between this feature and asymmetry. The conflict and betrayal feature is examined in a later analysis because no prediction was made regarding the direction of relationship. Hypothesis four was analysed separately for each of the sub-scales of interest on the FQQ.

Validation/Caring

It was predicted that asymmetry would be negatively correlated with self-reported validation and caring with in the dyad. For the SPS percentage success measure, a first order correlation analysis was used to test this hypothesis. As shown in Table 14, SPS percentage success asymmetry was not correlated significantly with dyadic validation and caring.

This hypothesis was also tested for the SPS total frequency measure of asymmetry. Because a significant relationship existed between child sex and the SPS total asymmetry measure, a hierarchical regression analysis was used to partial out the effect of sex and determine if a relationship existed between the other variables. As indicated in Table 15, SPS total frequency asymmetry significantly predicted dyadic validation and caring after controlling for child sex. Furthermore, as predicted, the relationship between SPS total frequency asymmetry and dyadic validation and caring was negative. Thus, the hypothesis was supported for the SPS total frequency asymmetry measure but not for the SPS percentage success asymmetry measure.

Table 14

Correlations Between SPS Percentage Success Asymmetry and Five Sub-Scales of the FQQ

	SPS Difference Percentage Success Score	FQQ Companion/ Recreation	FQQ Validation/ Caring	FQQ Help/ Guidance	FQQ Intimate Disclosure	FQQ Conflict Resolution
SPS Difference Percentage Success Score	1	0.059	-0.002	0.210	0.036	0.031
FQQ Companion/ Recreation	--	1	0.425***	0.614***	0.542***	0.342**
FQQ Validation/ Caring	--	--	1	0.708***	0.716***	0.778***
FQQ Help/ Guidance	--	--	--	1	0.806***	0.597***
FQQ Intimate Disclosure	--	--	--	--	1	0.640***
FQQ Conflict Resolution	--	--	--	--	--	1

Note. n varies from 59 to 64, depending on available data
***p <0.001, ** p < .01

Table 15

Hierarchical Multiple Regression Using The SPS Total Frequency Asymmetry Scores as a Predictor of the FQQ Sub-Scale Validation/Caring

Criterion: FQQ Validation/Caring

Variables	β	R^2	$R^2\Delta$	FΔ	df
Steps					
1. Sex of Dyad	0.343	0.117	0.117	7.577**	1, 57
2. SPS Difference Total Frequency	-0.301	0.199	0.082	5.726**	2, 56

Note. R^2 Total = .199, F (3,56) = 6.70, p = 0.002.
**P <0.01

Help/Guidance

It was predicted that asymmetry would be negatively correlated with self-reported help and guidance with in the dyad. For the SPS percentage success measure, a first order correlation analysis was used to test this hypothesis. As shown in Table 14, SPS success percentage asymmetry was not correlated significantly with dyadic validation and caring.

This hypothesis was also tested for the SPS total frequency measure of asymmetry. Again, a hierarchical regression analysis was used to partial out the effects of sex and determine if a relationship existed between the SPS total frequency asymmetry and help and guidance. As indicated in Table 16, SPS total frequency asymmetry did not significantly predict dyadic help and guidance after controlling for child sex. The hypothesis was not supported for the SPS total frequency asymmetry measure or for the SPS success asymmetry measure.

Table 16

Hierarchical Multiple Regression Using The SPS Total Frequency Asymmetry Scores as a Predictor of the FQQ Sub-Scale Help/Guidance

Criterion: FQQ Help/Guidance

Variables	β	R^2	$R^2\Delta$	FΔ	df
Steps					
1. Sex of Dyad	0.303	0.092	0.092	5.776*	1, 57
2. SPS Difference Total Frequency	-0.201	0.129	0.037	2.348	2, 56

Note. R^2 Total = .129, F (3,56) = 4.130, p = 0.021.
*P <0.05

Intimate Disclosure

It was predicted that asymmetry would be negatively correlated with self-reported intimate exchange within the dyad. Again, for the SPS percentage success measure a first order correlation analysis was used to test this hypothesis. As shown in Table 14, SPS percentage success asymmetry was not correlated significantly with dyadic intimate exchange.

This hypothesis was also tested for the SPS total frequency measure of asymmetry. A hierarchical regression analysis was used to partial out the effects of sex and determine if a relationship existed between the SPS total frequency asymmetry and intimate disclosure. As indicated in Table 17, SPS total frequency asymmetry did not significantly predict dyadic intimate exchange after controlling for child sex. Thus, the hypothesis was not supported for the SPS total frequency asymmetry measure or for the SPS percentage success asymmetry measure.

Table 17

Hierarchical Multiple Regression Using The SPS Total Frequency Asymmetry Scores as a Predictor of the FQQ Sub-Scale Intimate Disclosure

Criterion: FQQ Intimate Disclosure

Variables	β	R^2	$R^2\Delta$	FΔ	df
Steps					
1. Sex of Dyad	0.450	0.202	0.202	14.451***	1, 57
2. SPS Difference Total Frequency	-0.126	0.217	0.014	1.024	2, 56

Note. R^2 Total = .217, F (3,56) = 7.741, p = 0.001
*P <0.001

Conflict Resolution

It was predicted that asymmetry would be negatively correlated with reported conflict resolution with in the dyad. This sub-scale reflects the extent to which children perceive they are able to effectively resolve conflicts and work through disagreements. For the SPS percentage success measure a first order correlation analysis was used to test this hypothesis. As shown in Table 14, SPS percentage success asymmetry was not correlated significantly with dyadic conflict resolution.

It was expected that greater dyadic asymmetry would be related to lower of conflict resolution. The sub-scale conflict resolution reflects the extent to which children report they are able to effectively talk and work through disagreements. Again, a hierarchical regression analysis was used to partial out the effects of sex and determine if a relationship existed between the SPS

total asymmetry and conflict resolution. As indicated in Table 18, SPS total frequency asymmetry significantly and negatively predicted dyadic conflict resolution after controlling for child sex, as predicated. Thus, the hypothesis was supported for the SPS total frequency asymmetry measure but not for the SPS percentage success asymmetry measure.

Table 18

Hierarchical Multiple Regression Using The SPS Total Frequency Asymmetry Scores as a Predictor of the FQQ Sub-Scale Conflict Resolution

Criterion: FQQ Conflict Resolution

Variables	β	R^2	$R^2\Delta$	FΔ	df
Steps					
1. Sex of Dyad	0.320	0.103	0.103	6.519*	1, 57
2. SPS Difference Total Frequency	-0.296	0.182	0.079	5.415*	2, 56

Note. R^2 Total = .182, F (3,56) = 6.219, p = 0.004
*P <0.05

Companionship/Recreation

It was predicted that asymmetry would be unrelated to self-reported companionship and recreation within the dyad. Again, for the SPS percentage success asymmetry measure a first order correlation analysis was used to test this hypothesis. As shown in Table 14, SPS percentage success asymmetry was not correlated significantly with dyadic companionship and recreation.

This hypothesis was also tested for the SPS total frequency measure of asymmetry. A hierarchical regression analysis was used to partial out the effects of sex and determine if a

relationship existed between the SPS total asymmetry and companionship/recreation. As indicated in Table 19, SPS total frequency asymmetry did not significantly predict dyadic companionship and recreation after controlling for child sex. Thus, the null hypothesis that asymmetry would be unrelated to companionship and recreation within the dyad, was not contradicted by the SPS total frequency asymmetry measure or by the SPS percentage success asymmetry measure.

Table 19

Hierarchical Multiple Regression Using The SPS Total Frequency Asymmetry Scores as a Predictor of the FQQ Sub-Scale Companionship/Recreation

Criterion: FQQ Companionship/Recreation

Variables	β	R^2	$R^2\Delta$	$F\Delta$	df
Steps					
1. Sex of Dyad	0.080	0.006	0.006	0.368	1, 57
2. SPS Difference Total Frequency	-0.211	0.047	0.040	2.359	2, 56

Note. R^2 Total = .047 F (3,56) = 1.368, p = 0.263

Summary of Evidence for Hypothesis Four

The five friendship features, indexed by the sub-scales on the FQQ, were analysed separately in order to determine the specific relationships between friendship quality and asymmetry. The SPS percentage success measure did not yield any significant correlations with the five friendship features. The SPS total frequency measure was significantly and negatively related to the friendship features of validation and caring and conflict resolution. As dyadic asymmetry increased, friendship quality, as indexed by validation and caring and the ability to resolve

conflicts, decreased. Reported dyadic companionship and recreation was not related to friendship asymmetry.

Question One: Does Reported Frequency of Dyadic Conflict Differ with Friendship Asymmetry?

Frequency of conflict and betrayal was measured by 7 items on the FQQ. This scale reflects the extent to which children report the frequency of fights and disagreements with their friends and not children's ability to work through these problems (conflict resolution). The responses of both children in each dyad were averaged to yield a dyadic score for reported conflict frequency. High scores on the conflict scale indicated low frequencies of reported conflict and betrayal.

For the SPS percentage success asymmetry measure, a first order correlation was computed to examine the relationship between reported frequency of conflict and betrayal and asymmetry. SPS percentage success asymmetry was not correlated significantly with dyadic conflict and betrayal ($r = -.049$, $p = .712$).

However, because a significant relationship existed between child sex and the SPS total frequency asymmetry measure, a hierarchical regression analysis was used to partial out the effect of sex and determine if a relationship existed between the other variables. As indicated in Table 20, the SPS total frequency asymmetry did not significantly predict frequency of conflict and betrayal after controlling for child sex.

Summary of Evidence for Question One

On the basis of the SPS measures of asymmetry there was no evidence that a relationship existed between dyadic frequency of reported conflict and betrayal and friendship asymmetry.

Table 20

Hierarchical Multiple Regression Using The SPS Total Frequency Asymmetry Scores as a Predictor of the FQQ Sub-Scale Frequency of Conflict/Betrayal

Criterion: FQQ Conflict/Betrayal

Variables	β	R^2	$R^2\Delta$	FΔ	df
Steps					
1. Sex of Dyad	0.130	0.017	0.017	0. 980	1, 57
2. SPS Difference Total Frequency	-0.060	0.020	0.003	0.189	2, 56

Note. R^2 Total = .020, F (3,56) =.577, p = .565

Question Two: Is there an Interaction between Sex and Asymmetry In Predicting Friendship Quality?

To assess the interaction between sex and dyadic friendship asymmetry in predicting friendship quality, interaction terms between sex and the SPS percentage success and SPS total frequency measures were calculated. These interaction terms were computed by multiplying the standardized scores for asymmetry and gender. Separate multiple regression analysis were conducted for the two measures of asymmetry.

On the first step of the analysis for the SPS percentage success measure, dyad sex and SPS percentage success asymmetry were entered together. On the second step of the analysis, the interaction term for sex and SPS percentage success was entered. The criterion variable in the

analysis was the overall dyadic friendship quality score. As indicated in Table 21, there was no significant interaction between sex and the SPS percentage success measure of dyadic asymmetry.

A second and similar multiple regression analysis was performed to determine if there was a significant interaction between sex and the SPS total frequency measure of dyadic asymmetry. On the first step of the analysis, dyad sex and SPS total frequency asymmetry were entered together. On the second step of the analysis, the interaction term for sex and SPS total frequency asymmetry was entered. The criterion variable in the analysis was the overall dyadic friendship quality score. As illustrated in Table 22, there was no significant interaction between dyad sex and the SPS total frequency measure of dyadic asymmetry.

Table 21

Hierarchical Multiple Regression Using The Interaction Between SPS Percentage Success Asymmetry Scores and Sex as a Predictor of FQQ Overall Friendship Quality

Criterion: FQQ Overall Quality

Variables	β	R^2	$R^2\Delta$	FΔ	df
Steps					
1.Dyad Sex	0.352	0.127	0.127	4.077*	2, 56
SPS Success	-0.083				
2. SPS Success x Dyad Sex	-0.108	0.139	0.012	0.746	1, 55

Note. R^2 Total = .139 F (3,55) = 2.954, p = .040
**p < 0.05

Table 22

Hierarchical Multiple Regression Using The Interaction Between SPS Total Frequency Asymmetry Scores and Sex as a Predictor of FQQ Overall Friendship Quality

Criterion: FQQ Overall Quality

Variables	β	R^2	$R^2\Delta$	FΔ	df
Steps					
1.Dyad Sex	0.269	0.178	0.178	6.064**	2, 56
SPS Total	-0.253				
2. SPS Total x Dyad Sex	-0.153	0.194	0.016	1.114	1, 55

Note. R^2 Total = .194 F (3,55) = 4.422, p = .007
**p < 0.01

Summary of Evidence for Question Two

In terms of overall friendship quality, there is no evidence to suggest an interaction exists between sex and either of the SPS dyadic asymmetry measures.

Question Three: Is There an Interaction Between Friendship Status and Asymmetry in Predicting Quality of Friendship?

The third question addressed the possibility of an interaction between dyadic friendship status differences and dyadic friendship asymmetry in predicting the overall quality of the relationship. Dyadic differences in friendship was status is represented by the absolute value of the difference between the mutual friend nominations received by each child within the dyad. To determine if an interaction existed, interaction terms for SPS percentage success asymmetry and

friendship status and SPS total frequency asymmetry and friendship status were calculated. These interaction terms were computed by multiplying the standardized scores for asymmetry and friendship status. Two separate multiple regression analyses were conducted for each asymmetry measure.

On the first step of the analysis for the SPS percentage success asymmetry measure, dyad sex was entered. On the second step of the analysis, SPS percentage success asymmetry scores and dyadic friendship status were entered together. On the third step of the analysis, the interaction term for friendship status and SPS percentage success was entered. The criterion variable in the analysis was the overall dyadic friendship quality score. As indicated in Table 23, there was no significant interaction between friendship status and the SPS percentage success measure of dyadic asymmetry.

On the first step of the analysis for the SPS total asymmetry measure, dyad sex was entered. On the second step of the analysis, SPS total asymmetry scores and dyadic friendship status were entered together. On the third step of the analysis, the interaction term for friendship status and SPS total was entered. The criterion variable in the analysis was the overall friendship quality score. As indicated in Table 24, there was no significant interaction between friendship status and the SPS percentage success measure of dyadic asymmetry.

Summary of Evidence for Question Three

In terms of overall friendship quality, there was no evidence to suggest an interaction between friendship status and either of the SPS dyadic asymmetry measures.

Table 23

Hierarchical Multiple Regression Using The Interaction Between SPS Percentage Success Asymmetry Scores and Dyadic Differences in Friendship Status as a Predictor of FQQ Overall Friendship Quality

Criterion: FQQ Overall Quality

Variables	β	R^2	$R^2\Delta$	$F\Delta$	df
Steps					
1.Dyad Sex	0.347	0.120	0.120	7.786**	1, 57
2. SPS Success Friendship Status	0.089 0.085	0.134	0.014	0.448	2, 55
3. SPS Success x Friendship Status	-0.089	0.142	0.008	0.483	1, 54

Note. R^2 Total = .142 F (4,54) = 2.233, p = .077
**$p < 0.01$

Table 24

Hierarchical Multiple Regression Using The Interaction Between SPS Total Frequency Asymmetry Scores and Dyadic Differences in Friendship Status as a Predictor of FQQ Overall Friendship Quality

Criterion: FQQ Overall Quality

Variables	β	R^2	$R^2\Delta$	$F\Delta$	df
Steps					
1.Dyad Sex	0.347	0.120	0.120	7.786**	1, 57
2.SPS Total	-0.248	0.182	0.062	2.071	2, 55
Friendship Status	0.062				
3. SPS Total x Friendship Status	0.079	0.188	0.006	0.404	1, 54

Note. R^2 Total = .188 F (4,54) = 3.123, p = .022
**p < 0.01

Hypothesis Five: Individual Perceived Friendship Quality will be Positively Correlated with Individual Relative Power Scores

It was hypothesised that each individual within a dyad may perceive the friendship features differently and hence report different scores for each feature. In the next section of results the relationship between friendship quality and asymmetry will be examined on an individual rather than a dyadic basis.

Using the SPS measures, individual relative power scores were represented by the non-absolute value of the difference between the percentage of successful SPS attempts and the total frequency of SPS attempts. These individual scores indicate control relative to the dyad, therefore, the focal member (determined in the larger study) of each dyad was selected to represent the pair. It was hypothesized that individual power within the dyad would be positively correlated with individually reported friendship quality, as measured by the six sub-scales on the FQQ (companionship/recreation, validation/caring, help/guidance, intimate exchange, and conflict resolution) and overall friendship. This hypothesis was tested separately for each SPS measure.

The non-absolute value of the difference between the percentage of successful SPS attempts was significantly related to age ($r = .301$, $p = .026$), therefore, a hierarchical regression analysis was used to partial out the effects of age. On the first step of the analysis, age was entered. On the second step of the analysis, the non-absolute value of the difference scores for the percentage success SPS measure were entered. Seven regression analyses were computed. The criterion variables for the first six analyses were the six individual FQQ sub-scale score. The criterion variable for the seventh regression analysis was overall individual friendship quality score. The change in R^2 was nonsignificant for all regression analyses.

The non-absolute value of the difference between the total frequency of SPS attempts was unrelated to any demographic variables and a first order correlation was used to determine the relationship between individual relative power and individually reported friendship quality for the SPS total frequency measure. As shown in Table 25, the SPS total frequency individual power was not significantly correlated significantly with any of the reported friendship features. Furthermore,

the non-absolute value of the difference in total frequency of SPS attempts was not related to overall friendship quality.

Table 25

Correlations Between Non-Absolute value of the difference for SPS Total Frequency and Individual FQQ Sub-Scales and Overall Quality

	SPS Total Frequency
FQQ Companionship/Recreation	0.01
FQQ Validation/Caring	0.02
FQQ Help/Guidance	0.08
FQQ Intimate Disclosure	-0.03
FQQ Conflict Resolution	0.19
FQQ Absence of Conflict/Betrayal	-0.14
FQQ Overall Quality	0.03

Summary of Evidence for Hypothesis Five

There was no evidence that a relationship existed between individual power and individually reported friendship quality as indexed by the either of the SPS individual measures.

Discussion

Researchers have argued that equality is a fundamental component of children's friendships, which accounts for the significance of these relationships in social and cognitive development (Piaget, 1932; Sullivan, 1953). Despite these theoretical assumptions, variations in friendship equality have not been adequately investigated in empirical research. Consequently, the goal of the present study was to document and explore dyadic asymmetry of power. Friendship asymmetry in preadolescent, same-sex dyads was examined in relation to gender, friendship quality, and friendship status. Both observational and self-report data were used in this cross-sectional study. The majority of analyses took place on a dyadic level, although individual perceptions of friendship quality and individual positions of power were also examined. In the next few pages, the results of this study will be summarized and discussed in light of theoretical positions on inequality in children's friendships.

Asymmetry as a Friendship Feature

Balance of power is not a standard feature included in assessments of friendship quality because dyadic asymmetry has not been throughly investigated in prior research. However, for many children in the current sample, asymmetry was a recognizable component of their friendship. Although the majority of dyads were relatively equal relationships, there was substantial evidence of variation in the feature asymmetry. The distributions of asymmetry scores were relatively normal with moderate skewness in the direction of equality (Hopkins & Wells, 1990). Just as friendship dyads differ in terms of other features (e.g., intimacy, conflict), this study provides strong support for the fundamental hypothesis of the present study. Asymmetry is another reliably measurable component of children's friendships, which varies from dyad to

dyad.

The implications of inequality in children's friendships extends to the theoretical foundations of the literature on friendship. Equality between friends has remained a defining feature of the relationship since investigation in the area began (Ladd, 1999). Piaget (1932) and Sullivan (1953) both emphasized the importance of equality between friends. Piaget claimed that equality in peer relations allows children to freely express ideas and opinions, which is, in turn, linked to the development of cognitive skills. Furthermore, Sullivan believed children's friendships were responsible for enhancing sensitivity and self-esteem because children communicate on equal footing. If it is equality in friendships that promotes social and cognitive development then children who miss this opportunity, by being in asymmetrical friendships, may be at a developmental disadvantage for social and cognitive growth.

On the basis of the present findings, equality cannot be assumed to be an inherent characteristic of children's friendships. In fact, it is likely that children experience varying degrees of equality in their relationships. Although this variation was not fully recognized by Piaget and Sullivan, it is not incompatible with their theoretical positions. Inequality between friends is not the same as that which exists between children and adults or even between siblings. In adult-child and sibling relationships there is a recognized hierarchy. Inequality in friendships is less explicit because friends are generally treated as equals by others (e.g., parents, teachers, peers). Thus, asymmetry within a friendship may be a very different characteristic than inequality in other relationships. In any case, many best friendships can be described being asymmetrical. Further research is needed to compare friendship asymmetry to asymmetry in other relationships and determine the developmental implications of asymmetrical friendship.

Asymmetry and Gender

As indexed by the SPS total frequency measure of asymmetry, gender was significantly related to dyadic asymmetry. Boys' friendships were, on average, more asymmetrical than girls' friendships. In general, boys' dyads had greater differences between the total number of individual attempts made to influence one another. However, when dyadic differences between the individual percentages of successful attempts were considered, no significant gender differences were found.

One explanation for the discrepancy between measures may be explained by the nature of the task. Differences in the percentage of successful attempts may not reflect dominance or submissiveness, but knowledge of the task. Both girls and boys may be more likely to comply with a request if they believe it will help with the task. In the origami task the majority of attempts made were "instructional," with the apparent intentions of helping to complete the model. A large percentage of the goals were coded as prosocial, defined as attempts to share or give assistance to the other child. For instance, children frequently offered assistance by making suggestions to fold the origami paper in a particular way. Compliance with the attempt may have depended on whether the friend agreed with the suggestion. Therefore, differences between successful attempts within the dyad may be connected to the appropriateness of the attempt.

In contrast to the difference between success percentages, the difference between total number of attempts may reflect a willingness to allow an asymmetrical balance of power within the dyad. Regardless of the success rate, children who make many more total attempts to influence their friends during the origami task may be considered dominant. The observed gender differences are consistent with the literature on boys' and girls' friendships. Boys, in general, are

more likely to use commands, threats, and physical force in attempts to dominate and compete with their peer group than are girls (Maccoby, 1990). It is therefore, not surprising that asymmetry is more apparent in boys' relationships. The individual status-oriented style of boys suggests that issues of power and control occur frequently in their friendships (Buhrmester & Prager, 1995). It is possible that the boys establish their status over time. Over the course of the relationship, the non-dominant members of dyads may accept their position. It is also possible that dominance is dependent on particular settings (e.g., sports, school) and the dominant member of the dyad is task dependent. Boys may differ from girls in terms of their acceptance of asymmetry or willingness to allow one member of the dyad to dominate, resulting in a greater difference between total number of attempts.

On the other hand, girls tend to emphasize group cohesiveness and interpersonal connections (Buhrmester & Prager, 1995). It is unlikely that a power hierarchy had been established in many of the girls' friendships. Girls may feel that asymmetry threatens the harmony of their friendships and consequently may strive to avoid or rectify any imbalance. During the origami task, girls may have been less willing than boys to tolerate a power imbalance, resulting in a smaller difference between total number of attempts. For instance, girls may evaluate the overall input of their partners to the origami model before making an attempt. The total frequency of attempts to influence may be made in response to the frequency of attempts made by their friend. These gender differences may explain why asymmetry, as measured by the difference between total frequency of attempts, was greater in boys friendships than in girls. Furthermore, the two measures of asymmetry were not significantly correlated, which supports the idea that the measures reflect different forms of asymmetry.

Asymmetry and Friendship Quality

Relationship quality refers to the extent to which a friendship has more positive than negative features (Berndt, 1996). The qualities of friendships have been assessed in many ways throughout the literature (e.g., Bigelow, 1977; Berndt & Perry, 1886; Parker & Asher, 1993). A self-report questionnaire was used in the present study to assess friendship quality. Responses were made for six friendship features, defined by Parker and Asher (1993) as key elements of children's friendships. In the development of this scale, the independence of the features was demonstrated (Parker & Asher, 1993). However, in the present study the majority of the sub-scales were highly correlated. Furthermore, some researchers suggest that friendship quality can be best assessed through compiling all the positive and negative features into one composite score (Berndt, 1996). Thus, as an index of overall friendship quality, the sub-scales on the FQQ were combined. The results of this study provide support for the hypothesized association between dyadic asymmetry and friendship quality. Greater asymmetry was associated with lower overall positive friendship quality, over and above gender differences in asymmetry. In general, children in asymmetrical friendships reported lower overall relationship quality relative to children in more symmetrical friendships.

Friendship quality is also strongly related to gender. Many studies have found that boys' friendships are lower in quality than girls (Parker & Asher, 1993; Bukowski et al., 1994). The findings of the present study are consistent with this literature. Boys reported significantly lower scores for all features on the FQQ, with the exception of the companionship/recreation sub-scale. Because significant gender differences were expected for both dyadic asymmetry and friendship quality, I hypothesized that an interaction may exist between asymmetry and gender in predicting

friendship quality. No evidence was found to support this hypothesis.

The implications of low quality friendships have been widely demonstrated. Relative to children in high quality relationship, children in low quality friendships are more likely to experience problematic school adjustment (Ladd et al., 1996), lower self-esteem (Berndt, 1986), and loneliness (Parker & Asher, 1993). Asymmetry does appear to be linked to lower quality friendships, which may put children in imbalanced relationships at risk for these developmental problems. Thus, friendship asymmetry may be linked to adjustment difficulties, indirectly through lower friendship quality. However, it is also possible that inequality may be directly linked to problems since equality in friendships is thought to play a crucial role in social and cognitive development (Youniss, 1980). An important direction for future research is to explore the developmental outcomes of children in asymmetrical friendships. If these children do in fact experience unfavourable outcomes, it must be determined if friendship quality mediates the relationship.

It also was hypothesised that dyadic asymmetry would be linked to lower friendship features on four of the FQQ sub-scales. A significant relationship was found for two of these sub-scales (validation and caring and conflict resolution) with the total frequency of attempts measure of dyadic asymmetry. No relationship was found between the sub-scales companionship/recreation, intimate disclosure or help/guidance and asymmetry. The validation and caring scale reflects the extent to which children feel their friend is someone who makes them feel good about themselves, someone they can trust, and who cares and watches out for them. Children in asymmetrical friendships were more likely to report lower scores for this feature. Because the asymmetry and friendship quality measures were both dyadic, the possible

social and emotional developmental implications apply to both children in the dyad. If children do not feel supported by their friends, low self-esteem and loneliness may be serious problems. Parker and Asher (1993) found that low scores on each one of the sub-scales on the FQQ, including the validation/caring were associated with loneliness. Furthermore, lower global self-worth and self-esteem have been found to be linked to lower overall friendship quality (Berndt, 1986). The validation and caring feature of friendships may be particularly important in preadolescence because supportive friendships are believed to promote identity formation and self-esteem (Hartup, 1996).

The conflict resolution sub-scale reflects the extent to which children perceive they are able to effectively resolve conflicts and work through disagreements. The results of the present study suggest that children in asymmetrical friendships may have more difficulty resolving conflicts than those in symmetrical relationships. When conflicts arise in these friendships, children may be less inclined to compromise and work things out. Children in asymmetrical friendships may attempt to resolve conflicts by taking or allowing control of the dyad. If a power hierarchy has been established in asymmetrical friendships, then compromise may be less likely. Research on conflict resolution strategies between friends and non-friends has shown that friends are more likely than non-friends to compromise and disengage when conflict arises (Hartup, 1992). In terms of resolving conflict, children in asymmetrical friendships appear to act like strangers or acquaintances.

The companionship/recreation sub-scale reflects the frequency of contact between friends, such as spending recess and lunch together. Frequency of contact may be one area of the relationship that is being controlled. For instance, dominant children may insist that their friends

spend free time with them. Veniegas and Peplau (1997) found that the asymmetrical friendships of adults did not differ from equal friendships in frequency of association. Thus, both adults and children in asymmetrical friendships may spend as much time with their friends as their counterparts in symmetrical friendships.

Contrary to the prediction, there was no significant association between asymmetry and the two sub-scales, help and guidance and intimate disclosure. The help and guidance feature reflects the extent to which children report helping each other with various chores and school projects and lending each other things. It is possible that helping is another way to express dominance. The dominant child in an asymmetrical relationship may act as a mentor to his or her friend. Therefore, the extent to which help and guidance occurs in friendships may not differ in asymmetrical relationships. Furthermore, no significant relationship was found between asymmetry and intimate disclosure. This feature reflects the extent to which children reported talking about problems and sharing secrets. Although children in asymmetrical friendships reported feeling less supported and cared for, it is not clear if intimacy in these friendships differs from intimacy in symmetrical relationships.

The frequency of reported conflict and betrayal in friendships was another feature explored in the present study. Although there was no empirical evidence to form a directional hypothesis, it was thought that frequency of conflict may differ with friendship symmetry. It is possible that when one child is clearly in control of the relationship, the other child may accept the dominant child's position and avoid confrontation. As a result, their relationship will not be conflictual. Alternatively, the asymmetrical relationship may be characterized by a high frequency of conflict, if one child confronts the other whenever he or she makes attempts to

control the relationship. However, no relationship was found between asymmetry and frequency of reported conflict and betrayal. Frequency of reported fights and disagreements did not differ with asymmetry, despite the fact that children in asymmetrical friendships reported more difficulty resolving these conflicts than children in symmetrical friendships. Overall, the present study provides preliminary support for association between asymmetry and negative friendship quality. More research is needed to clarify the relationship between friendship features and asymmetry. One area of clarification involves studying the direction of influence in such relationships.

The correlation design utilized in the present study does not allow any conclusions to be made regarding the direction of the relationship between asymmetry and friendship quality. It is possible that issues of power interfere with other elements of the relationship. When one person is dominating the relationship, it may be difficult to develop, or communicate, other elements of the relationship, such as caring. Difficulty resolving conflict may also occur when an imbalance is established in the friendship. If asymmetry arises due to individual style or aspects of children's personality, then it is likely that lower quality is a consequence, rather than a cause, of asymmetry. However, the opposite direction of influence is also plausible. If the quality of the relationship is low, than it may be easier for a power imbalance to develop. Children may be more resigned to an imbalance if the relationship is lacking positive quality.

Asymmetry and Difference in Friendship Status

It has been suggested that differences in power arise between individuals of differing status, such as age, skill or sociometric status (von Salisch, 1996). In this study, I hypothesised that asymmetry would be related to differences in friendship status within the dyad. Friendship

status was based on the total number of mutual friend nominations. A greater difference in friendship status within dyads suggests one child has more mutual friends than the other. Despite clear differences between children in some dyads, asymmetry was unrelated to friendship status differences.

It was expected that an interaction may exist between asymmetry and friendship status in predicting friendship quality. No evidence was found to support this hypothesis. The relationship between friendship quality and asymmetry may be the same for dyads of differing friendship status as those dyads of equal friendship status.

Other factors that may account for asymmetry include age or skill (von Salisch, 1996). The children in the present study were all roughly the same age and in the same grade. Although age was related to individual power, differences of age within dyads were not related to asymmetry. Skill is another difference between friends that may account for some of the observed asymmetry (Verba, 1998). It is possible that some children were better at the origami activity (due to previous practice or possibly differences in spatial skills) and thus dominated the session. There was no way to examine this possibility in the present study. Friendships outside of school should also be considered. The children in the present study were paired with other children in their grade. However, it is likely that these children had friends in other grades or schools and as a result the number of mutual friend nominations for each child may not accurately reflect their entire friendship network.

Nevertheless, dyadic asymmetry could not be accounted for by the external factors of age and friendship status. The lack of support for this hypothesis further demonstrates the need to investigate asymmetry as a feature of children's friendships. In the past, researchers agreed that

asymmetry could arise in relationships that were imbalanced by external factors (Adams & Blieszner, 1994; von Salisch, 1996). However, it is important to understand what external factors may account for the observed imbalance between friends. Many other factors such as dyadic differences in sociometric status, academic ability, and prior origami experience should be considered. Individual style and personality might also be an important indicator of asymmetry. The final goal of the present study was to examine power and friendship quality on an individual basis.

Individual Perceptions

It was hypothesised that children who differed in relative power may perceive the relationship differently. Due to individual characteristics and perceptions it is likely that children within the same dyad will experience the relationship differently (Furman, 1996). Furthermore, the correlation between friends reports on the FQQ are often low or moderate (Parker & Asher, 1993). The results did not support the prediction that individual perceptions would be related to individual power.

Summary of Findings

Asymmetry was found to be significantly related to two of the four primary areas of investigation. Boys, on average, had more asymmetrical friendships than girls. Furthermore, regardless of gender, asymmetry was related to overall lower quality friendships, particularly as indexed by validation and caring and conflict resolution behaviour. No relationship was found between differences in friendship status and asymmetry. Also, there was no evidence to suggest individual power was related to individual perceptions of friendship quality. In the next section, methodological concerns and limitations of the present will be discussed.

Methodological Considerations

Measures of Asymmetry

The existence of asymmetry in children's friendship has received little attention by researchers. Consequently, there is no well established method of measuring this feature. One goal of the present study was to develop a reliable method to quantify asymmetry. It was hoped that the global observational coding scheme would accurately reflect dyadic asymmetry. However, it is uncertain whether this is a valid measure of asymmetry. Intuitively, the GOC would seem the most appropriate measure of asymmetry since the basis of each rating is on evaluations of balance of power. However, this method has not been properly tested by other researchers (with the exception of Kerns et al., 1996). The social problem solving scores were used as an indicator of asymmetry for the purposes of hypothesis testing because of the questionable validity of the GOC and the lack of relationship between the measures. It is likely that each of the measures reflects different types of asymmetry.

There are a number of behaviour patterns that could all be considered asymmetrical. The most obvious pattern is that one child in the dyad clearly dominates the relationship, making decisions about mutual actions and controlling his or her friend. This could be achieved in a positive (e.g., helping) or negative (e.g., relationally or overtly aggressive) manner. Another pattern of imbalance could exist if the dyad is continually experiencing power struggles. Each child may make attempts to gain control. This may be considered "equal" asymmetry, if power sways back and forth. A code was developed in the GOC to reflect this form of asymmetry. However, it was difficult to reliably identify this pattern and consequently few dyads received this code. It is possible that unstable asymmetry may occur during the initial stages of the

friendship. A key part of friendship formation involves confronting issues of conflict and confirming mutual common ground (Hartup, 1992). In the majority of friendships, power struggles diminish and an equal pattern of interaction emerges. However, in some friendships stable positions of power may occur, resulting in a stable asymmetrical relationship.

The extent to which asymmetry in the present study represents an imbalance of power is uncertain. Children's relationships may be imbalanced by communication style, task skill, or numerous other factors. Therefore, the spectrum of asymmetry is not clear, but it is likely to consist of many elements. It is possible that each of the measures (GOC, SPS success and SPS total) were tapping into these different forms of asymmetry.

Adding to the complexity of measuring asymmetry, the types of asymmetry measured are confounded within the task used in this study. As mentioned, the origami task used in ths present study may reflect differences in skill between children in dyads. Therefore, to an extent asymmetry may not reflect dominance of the relationship but task knowledge or skill. Similarly, the SPS total measure may reflect overall activity level, impulsiveness. Thus, the difference between total number of attempts may reflect an established imbalance, independent of task skill, although the interpretation of this difference awaits further research.

Observational Task and Procedure

An observational task was used in the present study because it was thought that balance of power would be better detectable through observations than by self-reports. Self-report disclosure is appropriate for a variety of friendship features, many of which can only be assessed in this manner. However, children may be relucent to admit they are in a relationship characterized by imbalance (Pepler & Craig, 1998). Children may also have distorted perceptions

of their relationships and be unaware that they are part of an asymmetrical friendship. For these reasons, an observational procedure was chosen to measure asymmetry. Whether or not differences in asymmetry could be detected by self-report should be addressed in future studies.

In the present study, the relationship between friendship asymmetry and friendship quality was examined. Friendship quality was measured by a self-report questionnaire. Comparisons between behavioural and cognitive measures must be made with caution because there are often weak relationships between the two methodologies, even when the same friendship qualities are measured (Simpkins & Parke, 2001). Ideally, the relationship between asymmetry and friendship quality should be studied using both observational and self-report techniques for all measures.

The origami task used in the present study also raises measurement concerns. Children were instructed to work on an origami model together and given ten minutes for the task. This task was chosen for two main reasons. First, the origami model must be shared between the children. In order to complete the model, they must be able to work together. In this setting, discrepancies of power are more likely to be seen than if children are each working on their own models. Thus, greater variations of power imbalance were more likely. The origami task was also chosen because it is similar to experiences children might have in everyday settings. The majority of these children are classmates and may often be required to work together on projects.

The main limitation of the origami session was that children may enter the task with differing skills. Because the goal of the task was to complete the model, the focus was not on sharing but on completing the model. As mentioned, much of the observed behaviour was instructional. A task in which children are required to share an item but not complete a project may have been more appropriate. In this situation, cognitive, spatial skills and/or previous

practice may not be confounded with asymmetry. The generalizability of the task is uncertain because of these issues.

The context of children's interaction must be considered when measuring any friendship feature. Hartup (1992) distinguished between "closed" and "open-field" conditions of measurement. The origami task is considered a closed situation because children were paired together and asked to sit and complete the task within a specified time. Under these conditions very different behaviour may be observed than if children were to interact on their own terms. For instance, disagreements between friends are generally more intense during a closed situation because there is less risk involved. In this setting friends must remain together until the session is over (Hartup, 1992). Therefore, we do not know if asymmetry would be observed in another setting or if the dominant child would be labelled the same under different circumstances.

Another concern with the observational task used in the present study is its artificial setting. The dyads in the study were observed and video-taped in a university laboratory equipped with two-way mirrors and video cameras. The children were aware that they were being video-taped and in some dyads they seemed concerned and often fascinated with the cameras. As a result, the behaviours observed may not accurately represent those that occur under naturalistic conditions.

Participant Population

The generalizability of this study is limited in terms of the age and ethnicity of these children. Although almost 40% of the sample was of minority status, we do not know the extent to which these results apply to other cultures. Evidence of cultural variations have been found in many aspects children's friendship (Krappmann, 1998; Elbedour & Shulman, 1992). For

instance, the expression and perceptions of intimacy in one study was directly related to the cultural values of Israeli adolescents (Elbedour & Shulman, 1992).

Furthermore, the parents of the participating children were highly educated. More than 50% of the children's parents had at least a one university degree. As well, the majority of these children's biological mothers and father were married. In terms of demographic similarity, these data can be generalized to a large number of North American populations. However, it is not known if these results differ depending on children's home environment. Many studies have found a link between family relations and friendship relations (e.g., Gauze, Bukowski, Aquan-Assee & Sipploa, 1996; Franco & Levitt, 1998). For instance, children's family support (by parents, siblings and non-parental adults) was related to higher friendship quality with their best friends (Franco & Levitt, 1998).

Suggestions for Future Studies

There is a need for future work on the friendship feature asymmetry. Evidence from the present study demonstrates that many children are in friendships that are characterized as asymmetrical. Yet, little is known about this feature. There are three primary areas in which follow-up research is needed.

Identifying Types of Asymmetry

The measurement of asymmetry in children's relationship is the first step for future research in this area. A concise scale is needed to observationally assess this feature. The GOC holds promise but more work is needed to test its validity. The SPS coding scheme is a less desirable method because it indirectly measures asymmetry. The coding scheme is intended for examining the social problem skills of children. Furthermore, it is a very tedious and time-

consuming scale to implement.

In the development of a measure, it is also important to identify and document different types of asymmetry. Asymmetry of power needs to differentiated from other forms of asymmetry in children's friendships. Furthermore, the relationship between stable and unstable asymmetry and the stages of friendship should be explored. As well, the strategies of control need to be recorded. An asymmetrical relationship may have different implications depending on whether positive or negative strategies of influence are used.

Origins of Asymmetry

It would also prove worthwhile to study the origins of asymmetry. Is asymmetry related to personality characteristics of one or both children in the dyad? If personality does play a role, will children with certain traits be more likely to be reencounter this type of relationship when new friends are made? There is evidence to suggest individual personality factors are related to reported conflict and closeness in friendships (Berry et al., 2000). Thus, individual style and friendship asymmetry is one area that should be examined in a longitudinal study on changes in individual friendships.

Asymmetry and Development

Asymmetry is associated with lower relationship quality. Low quality relations are associated with many negative developmental outcomes. Thus, to what extent are asymmetrical friendships related to negative developmental trajectories? The long-term consequences of asymmetrical friendships on aspects of social and cognitive development needs to be further investigated. As discussed, equality in friendships is though to promote development in these areas.

General Conclusions and Study Strengths

The comprehensive methodology used in this study adds to the strength of the present findings. Observation and self-report techniques were used to assess friendship asymmetry and friendship quality. The children's perceptions of their friendships and the actual patterns of interaction were both considered. However, it is common for researchers to find weak correlations between self-report and observations even when the same features are being measured (Simpkins & Parke, 2001). Therefore, the correlation between the social-cognitive measure of friendship quality and the behavioural measure of asymmetry is especially important and suggests this is a promising area of investigation.

Different levels of analysis were also utilized in this study. For both the self-report and observation measures, dyadic and individual perspectives were considered. In many studies on children's friendship quality, the responses of both children were not considered. In the present study, each child made responses on the quality of their friendship. Furthermore, individual perceptions of friendship quality and individual power positions were examined. Reported friendship quality was not related to relative power within the dyad. However, dyadic asymmetry was related to dyadic friendship quality and it can be argued that both children in asymmetrical dyads perceive lower friendship quality.

Asymmetry in children's friendships was explored using a mulitmethod approach and different levels of analysis because this factor had not been previously examined. On the basis of the present study it can be concluded that children's friendships differ in asymmetry. Furthermore, children in asymmetrical friendships report lower quality of friendships. The implications of these findings are not fully understood and need to be investigated in future research.

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1. The principal investigators of the larger study include Ken Rubin, Linda Rose-Krasnor, Cathryn Booth and Kim Burgess.

2. The third dyadic score, SPS success and partial success score, was not used for hypothesis testing because it was very strongly correlated ($r = .771$, $p = .001$) with the SPS success measure. This SPS success and partial success score was based on the absolute value of the difference between the percentage of successful and partially successful SPS attempts made by each child in the dyad.

Appendix A

Instructions for the Child-Friend Laboratory Visit

NIMH Friendship Project

Instructions & Interview for Friend Dyad Visit

Before families arrive, put ID numbers on all questionnaires. ONLY TAKE ID #s FROM ACCESS LISTS.

Greet parent(s) and children. Give general briefing regarding what kids and parents will do & where. Ask kids & parents if they've heard anything about what we do. In a minute we'll go across the hall to do some games & activities for about 45 minutes -- first they can play with whatever they want for 10 minutes; also, they'll talk about good times; they'll plan a weekend; they'll do paper folding; & last we'll read a story about friendship & ask questions about it.

While you're in the playroom, we'll ask your Mom(s) to fill out questionnaires in here, if that's okay with her (them)? Then afterward you'll come back here and fill out a few questionnaires yourselves. Because we're interested in what friends say & do with each other, we'll videotape it if that's okay? But whatever you do here—the questionnaires & the activities in the other room--are totally private & confidential – so nobody else will see anything because it's all between you & us, ok?

Ask parents & children to fill out consents before starting.

{Here's the consent form—if you'd like to read & sign it now before we get started.}

Put name-tags on children's backs.

{If a child has no parent with him/her, then briefly explain what the consent form says: This (point to that paragraph) describes the activities that I just told you about. This says everything is confidential & your questionnaires only have numbers not names to keep it private. Do you have any questions?}

Bring dyad into the playroom and give them 10 minutes to get comfortable there - **FREE PLAY session**. Say to children, "Here are some activities you can do like play hockey, basketball, or ping-pong. There are arts & crafts things for drawing (point) like glitter markers & stamps, beads; also, there's Jenga, and an UNO card game. Feel free to do whatever you want. I'll be back in 10 mins.

Under no circumstances do parents watch behind the 1-way mirror; and NEVER give parents a videotape after the visit. If parents push on this issue & insist they see it somehow, then you can suggest they may view the videotape with a staff member at a later date & ONLY if both children give their permission. At the end you would ask the 2 children if it's okay for their parents to see the videotape in our office another time.

Experimenter: After free play, go back in & ask, "Are you ready to do some activities? OK. How about putting these things away; then come over here to the table and have a seat. {Target's name}, could you sit here {point to chair on your left}, and {non-target's name} sit here. I want you to know that nothing you'll do today is a test; there are no tests. We're really interested in what kids' friendships are like -- basically, what kinds of things you do, say, & think about."

BEST TIME

For the first thing, I'll start by asking you "How long have you known each other?" How did you meet? We're really interested in what kids do with their friends. So, for this activity we'd like you to think about the good times you've had together. Talk about all the things you like to do together, what you've done together, especially the fun times you have had. It could be special events or things you do together all the time. Just talk about things you've done and what it was like. After 5 minutes, I'll come back and then I'd like to hear about those things.

After coming back in, "That sounds like fun, etc..."

MORAL DILEMMA DISCUSSION TASK

Experimenter: Now I'm going to tell you about a problem. *Put a copy of the problem inbetween the 2 children. Read the instructions, vignette, & questions. After sheets read, ask them if they have any questions.* I'll leave and then come back after about 10 minutes. If you finish early, just go over to this door (point) and knock on it, I'll hear you; then go back to your seat, and I'll come back in. Place *one pencil at the top and center of the table between both children.*

After 10 minutes, come back in the room and ask the children, "So how did it go? Would you like to tell me what your answers are? That's great. Thanks." Clear off the table before starting the next task.

ORIGAMI ACTIVITY

Experimenter: The next activity is called Origami. Have you heard of it? *Say* "This is a frog; this is a sailboat; and this is a penguin" *as you lay them out.* I'd like you to choose <u>one</u> model to create and work <u>together</u> to finish it. Here's a piece of paper and the instructions for each model. *Place the instructions in front of each model.* The penguin is the easiest to make, the sailboat is the next difficult to make, and the frog is the hardest to make, although they're all challenging. Both of you decide which one you'd like to make together; and then you have 10 minutes to work on it. If you finish one model before I come back, here is another piece of paper to start a second one. *Place paper in the upper corner of the table.* I'll be back in 10 minutes.

After 10 minutes, come back in the room and ask the children how they did or how it's going. Say, "That looks great. So you made the _____. Good job. I'll take these for you and you can get it before you leave if you like. (Collect direction and models.)

Clear off table before next task.

PLAN A WEEKEND ACTIVITY

Experimenter: For the last activity, we'd like the two of you to plan an imaginary weekend together. To plan this weekend you can assume two things: (1) you have an unlimited amount of money to spend (as much as you want); and (2) that you have permission from your parents. While thinking about your weekend, you'll have to consider all the details -- activities for the morning, afternoon, and evening -- and things like where you'll stay, how you'll get around, & how you'll get food. Use your imagination to plan everything from Friday night until Sunday afternoon. If you want, you can write down your ideas on this sheet *(show them the planning sheet & make sure they see it is double sided)*. In 10 minutes I'll come back and you can tell me about the weekend you two planned. *Place one pencil & the planning sheet in the middle of the table.*

After 10 minutes, come back in the room and ask the children what they came up with. "Sounds good; great weekend, etc."

Say, "*Now _____ will head over to the other room to do the questionnaires and _____ will stay here to answer some questions about a friendship story." Afterward you'll switch so _____ will come back here for the friendship story. {Take one child back to the lab for questionnaires}. Before a child starts questionnaires, ask if he/she wants a drink, food, or restroom.*

Selman Interview

"We're going to read about a friendship and a dilemma. So listen carefully because I'm going to ask you some questions after we read it." Read story slowly while showing pictures, then read questions. These pictures tell a story... After reading the story, leave the last card there while reading the questions.

Before families leave:

- Explain payment procedure. Get mothers' full names, addresses, & SSNs for payment purposes.
- Give both children choice of one bag of chips & one chocolate bar, first checking with the parent(s) if it's okay to give them those things. If parent says "No", then give kids a bag of microwave popcorn instead.

- {Don't say until further notice: If you know that the kids have other friends who are also coming to the Lab, then ask the kids not to tell others what they did. If you know ahead of time the kinds of things we'll ask, then your answers might have been different, right? So we want it to be the same for other kids as it was for you—then it's more fair that way. We want them to be surprised & for it to be a new experience for them as it was for you, ok?}

- When the first several pairs of girls come in, ask them if they can think of any other things we should add to the playroom that 10 or 11-year-old girls like.

Appendix B1

Friendship Quality Questionnaire

Friendship Quality Questionnaire – Revised (FQQ; Parker & Asher, 1989)

Friendship Quality Questionnaire

EXAMPLES:

A. I sit right next to the door.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

B. I really like movies that are scary.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

C. _____ and I are the same size.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

Think about your relationship with _____.

1. _____ and I live really close to each other.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

2. _____ and I always sit together at lunch.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

3. _____ and I get mad at each other a lot.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

4. _____ tells me I'm good at things.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

5. If the other kids were talking behind my back, _____ would always stick up for me.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

REMEMBER: THERE ARE NO RIGHT OR WRONG ANSWERS TO THESE QUESTIONS

6. _____ and I make each other feel important and special.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

7. _____ and I always pick each other as partners.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

8. If _____ hurts my feelings, _____ says "I'm sorry."

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

9. I can think of some times when _____ has said mean things about me to other kids.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

10. I can always count on _____ for good ideas about games to play.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

11. If _____ and I get mad at each other, we always talk about how to get over it.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

BE SURE TO READ CAREFULLY AND ANSWER AS HONESTLY AS POSSIBLE

12. _____ would still like me even if all the other kids didn't like me.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

13. _____ tells me I'm pretty smart.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

14. _____ and I are always telling each other about our problems.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

15. _____ makes me feel good about my ideas.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

16. When I'm mad about something that happened to me, I can always talk to _____ about it.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

17. _____ and I help each other with chores or other things a lot.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

BE SURE TO READ CAREFULLY AND ANSWER AS HONESTLY AS POSSIBLE

18. _____ and I do special favors for each other.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

19. _____ and I do fun things together a lot.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

20. _____ and I argue a lot.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

21. I can always count on _____ to keep promises.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

22. _____ and I go to each other's homes after school and on weekends.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

23. _____ and I always play together at recess.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

24. When I'm having trouble figuring out something, I usually ask _____ for help and advice.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

25. _____ and I talk about the things that make us sad.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

26. _____ and I always make up easily when we have a fight.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

27. _____ and I fight.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

28. _____ and I always share things like stickers, toys, and games with each other.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

29. If _____ and I are mad at each other, we always talk about what would help to make us feel better.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

30. If I told _____ a secret, I could trust _____ not to tell anyone else.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

31. _____ and I bug each other.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

32. _____ and I always come up with good ideas on ways to do things.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

33. _____ and I loan each other things all the time.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

34. _____ often helps me with things so I can get done quicker.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

35. _____ and I always get over our arguments really quickly.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

36. _____ and I always count on each other for ideas on how to get things done.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

37. _____ doesn't listen to me.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

38. _____ and I tell each other private thoughts a lot.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

39. _____ and I help each other with schoolwork a lot.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

40. I can think of lots of secrets _____ and I have told each other.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

41. _____ cares about my feelings.

Not at all true A little true Somewhat true Pretty true Really true

0 . . . . . 1 . . . . . 2 . . . . . 3 4

Appendix B2

Global Observational Coding: Balance of Power Coding Manual

Global Observational Coding (GOC)

Overview

In the original use of this coding system Kerns et al. (1996) rated the dynamics of child friendship dyads after watching each 10 min conversation segment. Affect, Criticism, and Balance of Communication/Power were coded on a 3-point scale. Intimacy of disclosure and responsiveness/ attentiveness were coded on a 5-point scale. The GOC was used in a study with school-age children. The following coding system will specifically be used for rating dyadic balance of power in preadolescent children and is an expansion of the GOC used by Kerns et al. The following coding system will be used in a 10-minute, video-taped task in which best friends are asked to make an origami model together. The coding system may be modified for other settings.

Global Coding of Dyadic Balance of Power: Origami

The balance of power coding system will be used to measure the asymmetry of children's friendships. Asymmetrical friendships can be defined as dyadic relationships in which each person does not have a comparable chance of influencing the other's actions and views. Power is unequally distributed in the sense that one person has more control over the activities of the dyad than the other.

The balance of power coding system will be used to directly code the degree to which one individual in the dyad possesses more control in a dyadic interaction task. This is a global coding system that considers the overall atmosphere of the interaction. A code is made for each minute of interaction based on the researcher's impression of the dynamics and behavior of the dyad. Using the same strategy, a single rating representing the entire segment is also made at the end of the 10-minute task. By examining the majority of the verbal and non-verbal behaviors that occur during each minute of interaction, a rating can be made on a 3-point scale.

Guidelines

-Begin timing for each minute once the experimenter is off camera.
-Stop coding once the experimenter has re-entered the room. If less than 30 seconds has passed since the last code then do not record another rating. If 30 seconds or more has elapsed since the last code and the re-entry of the experimenter then treat the time as if one minute has passed and make a rating.
-One code for each minute of interaction
-One code for the entire segment of interaction
-The ID for the child "in control" must be recorded if a code of "2" or "3" is given.

3-Point Scale

1 ➡ One dyad member clearly more dominant

examples

-One child makes decisions about which model to make without asking/listening/consulting with their friend

-One child takes the paper and/or instructions away from the other and/or will not let the other child gain control of the pencil and paper - One child is denied access to paper even after repeated asking or attempts; pushing other child away

-One child ignores the suggestions and attempts of the other

- Negative name-calling or making their friend feel inferior - "That is a dumb thing to do!"

- Body language may signal dominance, one child may put materials on one side of the table and lean over so the other child cannot gain access.

When the majority of each minute of interaction is characterized by the above examples a code of "1" is given. One child must be in control of the dyad approximately 75-100% of the time. (45+ seconds)

However, if it is very obvious that the child does not want to be involved in the model (e.g., the say they don't want to even when the other child insists), a score of 1 should not be given.

2 ➡ Some imbalance although not as extreme as above. May adopt leader and follower roles. Power may be an issue.

examples

-One child has possession of the model for the majority of the time but the other child also has some input in terms of reading the instruction or direct access to paper.

-One child seems to make most of the final decisions despite input from both children.

The child who is controlling the work on the origami model is in control the majority of the time is coded as "in control". One child must be in control of the dyad approximately 50-75% of the time (30-45 seconds).

3 ➡ Even balance of power, there is an effort made to agree and accept suggestions and assistance from each other. Both children are equally involved in the task.

examples

-Children take turns working with and folding the paper model

-Children ask each other for suggestions - "What do you think?"; "What should we do now?";

-"It's my turn now, It's your turn now."; "What do you do next?"

- The goal of the children is to get the task completed and not to control one another.

Overall code:

After viewing the entire session, an overall code will also be given using the same scale.

A code of 3a can also be given for the overall code.

3a ➡A form of equality where power is an issue but both children are equally controlling throughout the entire task; it cannot be determined which child is in "control" (neither one stands out as the more dominant one)

examples

-Neither child is clearly more controlling than the other yet there are attempts for control made by each child.
-Children may disagree - "We are not doing that model", "Yes were are!" and little effort is made to compromise
-Both children grab paper and instructions from each other; they fight over the instructions of the model.
- Each receives an approximately equal number or 2's.

Other things to Consider:
-Minutes with no interaction. If the child are occupied with their own tasks and not involved with each other in any way, neither verbally nor non-verbally, "NOINT" will be recorded.
- At times when the children cannot be seen or when their conversation is unintelligible for the majority of the minute, "UNINTELL" will be recorded.

Appendix B3 .

Child Social Problem-Solving Manuel(Adapted from Rubin & Krasnor, 1986)

Social Problem Solving Observational Coding Taxonomy 1995

Overview

Social-problem solving (SPS) attempts are socially-oriented initiations which one person (the initiator, referred to also as the focal child) uses to influence another person (the target, referred to also as the nonfocal child). In coding these attempts, the critical variables are: the initiator's goals, his/her strategies used to achieve these goals, the outcome of SPS attempt and the affect associated with the SPS attempt.

The SPS coding scheme has derived from research on dyads of children ranging in age from 4 to 8 years, the present version of the coding scheme has been modified for use with children in groups of four. For the most part, the paradigm used in the development of the coding scheme was naturalistic in nature; typically, groups of same-age, same-sex children were video-taped during play. The present coding scheme was developed for use with these videotapes.

The purpose of this manual is to provide researchers with a useful scheme for coding social-problem solving attempts between children. The manual contains a detailed description of the transcription and coding procedures and includes definitions for all coding categories along with general coding guidelines.

Coding Social-Problem Solving Attempts

There are six components in the coding of social-problem solving attempts. These components include: goals, strategies, outcomes, affect, proximity and physical orientation. In coding an SPS attempt, one category is chosen from each of the six components; together these units describe the entire SPS episode. In addition to the coding of the above outlined components, a verbatim transcript of the entire interaction is recorded along with the start-time of the SPS attempt and the identification numbers of both the initiator and the target child(ren).

Code 10 minutes of interaction from the start of the episode. In some instances, the episodes (e.g., free play/origami) may go beyond 10 minutes, only the first 10 minutes are coded. By coding the first 10 minutes the number of SPS attempts within the episode are

comparable. If the episode is less than 10 minutes please indicate this information on the front of the transcript.

Mark on the front of the transcript: Start Time: & Stop Time:

Do not start until the experimenter has stopped talking.

Goals

To code as an SPS attempt the goal should be clear, i.e., there is not more than one possible goal. For example, the goal may appear to be to get target child to behave in a different way or the goal may be in response to the target child's request to continue to play the game, as the goal is not clear, do not code as an SPS attempt. Another instance in which you do not code an interaction as an SPS attempt is bumping, screaming, etc., during/in the context of a game.

If it is not clear what is being said between the interactants, do not code as an SPS attempt.

If you are attempting to differentiate whether the focal child's action is an SPS attempt or self-talk, code as an SPS attempt if the focal child gestures toward, looks at, or appears to be engaging the target child in some manner. If the focal child does not appear to be engaging or orienting him or herself toward the target child, consider the behavior as self-talk and do not code as an SPS attempt.

1. Joint action

Attempts to initiate social play or a joint activity. In social play, an individuals' actions are contingent upon his/her partner's actions (i.e., are related in content and occur within 10 seconds) (e.g., "Want to play checkers?"; [While playing 'house'] "Now, you be the mommy and I'll be the daddy."; [while playing cards] "Let's play a different game."). In a joint activity, two or more individuals are engaged in a non-play activity with a common purpose or goal (e.g., "Let's clean the room up now."). The children can already be playing a game and be setting up a new rule within the context of the game (e.g., let's keep it on the table). Let's is typically indicative of joint action.

The goal of an SPS attempt for joint action is to involve both children in the activity.

2. Play solitary

Attempts to initiate or maintain solitary behaviour (e.g., "I'm bored of this game, I don't want to play anymore" [leaves the joint play activity]; [As target is hovering near initiator] "Leave me alone please.").

3. Object acquisition/access

Attempts to acquire any object or gain control (i.e., take any amount of control away from target) of any object that is in the possession of the target (e.g., "Give me Ernie!"; "Can I turn the wheel now?"; [Without asking, initiator reaches over and moves controller of electronic game target child is playing with]; [initiator picks up and moves remote-controlled car that the target is using]).

The only goal of the attempt is to have or be in control of the object.

4. Attention

Attempts to get the attention of the target. Attention may be to self or to another person or thing (e.g., "Hey, look at me!"; "Can you see the plane in the sky?"; "Look at her hair!" [points]).

(If the intent of the SPS attempt is to do something rather than just draw attention, e.g., catch a ball, then code as elicit action).

5. Information

Attempts to acquire information about self (i.e., feedback or evaluation), the target, a third person, place, event or thing (e.g.; "Does my hair look ok?"; "What is your name?"; "Is that the researcher?"; "When is Saturday?"; "Why is this thing here?"). Two cases not to be coded as 'information' are: 1) requests for verbal repetition (e.g., "What did you say?") and 2) rhetorical questions (e.g., "You know what? I got a new bike today!"). "Information" does not help the task or joint activity.

6. Assistance

Attempts to gain help, comfort or instruction from the target (e.g., "Can you tie my shoe?"; "I want my mom, please call her for me."; "Can you show me how to play 'Go Fish'?).

If the initiator does not really look to friend for assistance or wait for friend's help when making a request for assistance do not code as an SPS attempt (e.g., I wonder if they have any tape [does not look at friend but continues looking through boxes by his or her self]).

7. Prosocial (sharing/assisting)

Any attempt to share with or give assistance to the target (e.g., "Here, Paul, you can play with the car now." [hands Paul car]; [initiator helps the target get up after falling over chair]). These initiations must be unsolicited, therefore, responses to requests by the target are not to be coded. Can be positive or negative. Any attempt that helps the task. (e.g., I'll start the gimp for you). Sharing of information with respect to play activity is also considered prosocial, (e.g., You knot, and you can pull it with your teeth too).

A child may use a command as a strategy but the goal is prosocial, (e.g.,put it here). {If the focal child is correcting the behaviour of the target child then code the goal as stop action

rather than prosocial.}.

8. Stop action

The initiator requests that the target cease doing some activity either inside or outside of the context of play (e.g., "Stop singing, I don't like it!"; "Don't talk to me."; [While playing a board game] "Hold on, stop; it's my turn;." "It's not suppose to be like that;" "wait"; "don't"). Highest order goal. The interaction focuses on what shouldn't be done.

If assuming target child is about to do something, e.g., don't play ping pong, then code as stop action.

9. Elicit action

The initiator requests that the target physically engage in some activity not codable elsewhere in the other goals outlined (e.g., "Come here please."; "Hold this." [hands target a ball]; "Pardon me; what did you say?"). Very specific action.

If friend is off task and the goal is get friend back on task then code as elicit action.

10. Elicit Action – Self

The initiator asks for permission to do something themselves. Only coded in the context of joint action (e.g., "I am going to work on the frog now"; "I am going to move this up")

Focal child does not appear to be implicating both his/herself and target child in SPS attempt code as elicit action – self. If it appear focal child is attempting to include both children in activity code as joint activity.

11. Dramatic

Role-playing, make believe or pretend.

Strategies

1. Aggressive Physical

Initiator uses physical aggression in conjunction with any other strategy (e.g., "Stop that!" [initiator hits target]; "I want the ball!" [initiator pushes target away from the ball]).

2. Aggressive Verbal

Initiator uses verbal aggression (but not physical aggression) in conjunction with any other strategy. Verbal aggression is considered to be any personal verbal attacks (e.g., "Give me that you dummy!"; "I don't want to play with ugly people like you!").

3. Incentives (negative or positive)

The initiator uses either negative or positive incentives to gain the target's compliance. Negative incentives are threats of retribution for non-compliance to the request (e.g., "Give me the doll or I'll hit you!"; "Leave me alone or I'll tell!") while positive incentives are bribes (i.e., payment for compliance) (e.g., "I will be your friend if you give me the car."; "Let me play with you and I will give you a piece of gum."). The coder is to specify the type of incentive used by the initiator.

4. Questions

Initiator asks a question (e.g., "How does this work?"; "Why did you laugh?"). This does not include suggestions or imbedded imperatives (see Indirect Requests, below). Questions, may take the form of: How do I do something; How does this work; when do you want to do . . .

5. Indirect Request

Indirect requests are directed declaratives (i.e., declaratives directed at the target specifically, for example, through physical orientation to the target or the use of the target's name) (e.g., [looking at target] "I need some paper."; "Sue, I would give anything to have your beach ball."), suggestions (e.g., "How about we play house?", "Why don't we try to escape?"), interrogatives (e.g., "Can you go away?"; "Would you give me the pan?"), or implied requests (e.g., [looking at target] "Your shoe is untied."; "That's not how you should draw a house.").

Indirect requests take the form of 'polite' language. For example, 'can you pass the salt' is not asking are you physically able to pass me the salt, rather 'can you pass me the salt (an indirect request) is asking: would you 'physically' pass the salt. Indirect requests are asking for help and may be prefaced with: can; wanna; would you; how about; why don't we. Indirect requests are requests for action.

6. Commands/direct requests

Initiator uses the imperative to issue a direct request to get attention (e.g., "Get lost!"; "Give that back!" ; "look"; "come on"; "see"; "sit";). It is other, not self oriented. Can be a single verb.

7. Non-verbal (gesture/grabbing/reaching)

Initiator uses a strategy that does not require language (i.e., is physical) to be understood by the target as a request. Generally, there are two types of non-verbal strategies, non-invasive and invasive. For non-invasive strategies, the initiator uses some form of gesture to communicate the request to the target (e.g., [initiators hands a toy to the target without speaking or being asked]; [initiator puts finger to lips in request that the target be quiet.]) or the initiator uses some object as a communication device (e.g., [initiator honks horn of play car in an attempt to make target move]).

Gestures are a part of the attempt that carries communicative intent (e.g., showing/waving/pointing). Invasive strategies, on the other hand, include grabbing and reaching.

Grabbing is considered to be the taking, without permission, of anything in the possession of the target child and is a special case of non-verbal strategies, as it might or might not involve aggression. If the action is simply the taking of an item from the target child and does not involve either physical or verbal aggression, it is simply coded as 'non-verbal: grabbing'. However, if the attempt involves physical aggression or seems to be inherently aggressive in nature (i.e., is not simply the initiator taking something in the targets possession but is of a more offensive nature), the strategy is coded as 'aggressive-physical'. Furthermore, if the grabbing is in conjunction with verbal aggression, then 'aggressive-verbal' is coded. To distinguish between aggressive and non-aggressive grabbing, the coder should use cues such as facial expression, tone of voice and the situational context.

Reaching is the touching or handling of or otherwise physically interfering with anything in the possession of the target child (e.g., [initiator brushes the hair of the doll the target is holding];

[initiator pushes the buttons of a calculator being used by the target]; [initiator puts hand in front of the remote-controlled car that the target is operating]). Reaching is distinct from grabbing in that the initiator does not attempt, at any point, to take the object, or control of the object, away from the target child.

8. Other

Initiator uses a strategy not codable into one of the above categories. The coder should try to specify the strategy on the comment line as is best possible. [Statement=give reasons, e.g., I'm going to decorate these]

Note: Statement by itself would not be coded as an SPS attempt, since no action or information is being solicited.

9. Unknown

The strategy cannot be determined by coder (e.g., [children whisper and cannot be heard]).

Outcome

1. Success

Target complies with request or action, without further involvement by the initiator, within 10 seconds. Looks at (or watches) and verbally acknowledges (includes laughing) focal child.

Special circumstance: if the goal is attention and the target child looks at the focal child but does not say anything, code as success.

2. Partial Success

Target complies partially with request or action, within 10 seconds (e.g., [child gives only one block when ten were requested]. A partial success may also be one in which a compromise of the original goal has been made (e.g., [child states she will share later instead of at the present moment]). If the focal child asks the target child a question, and the target child acknowledges the question, but cannot answer the question, outcome is coded as partial success. Also, acknowledgment of the initiator's SPS attempt without actual compliance to the attempt is also considered a partial success (e.g., I:"Can I have the toy now?", T:"Sure." [Target continues to hold toy]).

If the target child "appears" to respond to the subject/request of the focal child, e.g., just laughs but doesn't look at the focal child, code as partial success rather than no response.

3. Self-Solution

The initiator achieves the goal by his/herself within 10 seconds after the request has been made (e.g., [target shuts door himself after requesting target to close it]).

4. Rejection

Target actively refuses to comply within 10 seconds.

5. No response

Target does not respond to initiator's request within 10 seconds.

6. Unknown

The outcome of the SPS attempt cannot be determined by the coder. This inability might be due to video or audio difficulties (e.g., [children are out of view of camera]) or as a result of the interference of a third child (e.g., [third child grabs toy from target immediately after initiator has requested it]). As well, the outcome is coded as 'unknown' if the attempt is either a non-request (i.e., Hostile or Affectionate initiations), or requires future compliance (i.e., beyond the time of the experimental session; see 'General Rules and Guidelines' section). Finally, if the SPS attempt is imbedded within a string of independent SPS attempts and the target child does not respond to the attempt, again, 'unknown' is coded for the outcome (see 'General Rules and Guidelines' section).

Affect

1. Positive

Initiator laughs, smiles, giggles and/or chuckles during SPS attempt. **Do not use voice only.**

2. Negative (externalizing/internalizing)

Initiator frowns, whines, cries, pouts, knits eyebrows, furrows brow, yells or uses angry tones during SPS attempt. The nature of the negative affect should be specified as being either 'externalizing' (i.e., angry) or 'internalizing' (i.e., sad, anxious, frightened).

3. Neutral

Initiator does not display clear signs of either negative or positive affect as defined here.

5. Unknown

The affect of the initiator is unknown.

Proximity (To Target)

1. Touching

Initiator is in direct contact with target during the majority of the SPS attempt. If children are sitting close and it cannot be determined if they are touching then it is coded as "within arms reach"

2. Within Arms Reach

Initiator is capable of touching the target with one or both hands during the majority of the SPS attempt.

3. Beyond Arms Reach

Initiator is not able to touch the target with either hand during the majority of the SPS attempt.

4. Unknown

The proximity of the initiator to the target is unknown during the SPS attempt.

Orientation

1. Toy/Play Object

Initiator is looks predominantly at toy or play object (of concern) during the SPS attempt.

2. Target Child

Initiator looks at target child during the SPS attempt.

Within an SPS attempt the initiator may look at the play object and the target child, for example. In situations where the initiator looks between the play object and the target child, code orientation as target child. So if the initiator turns towards, faces, makes an attempt to move toward the target child during the SPS attempt code as target child. In addition, if the initiator looks at the target child directly following the SPS attempt code orientation as target child.

3. Other Child

Initiator looks predominantly at another child during the SPS attempt; coder must specify identity of other child.

4. Elsewhere

Initiator looks predominantly elsewhere during SPS attempt.

5. Unknown

Orientation of the initiator is unknown during SPS attempt.

Transcription

When transcribing children's SPS attempts, it is extremely important that everything that each child says is recorded verbatim. The coder should be as accurate as possible and record only what the child is actually heard to say. Often, when children mutter or several children are speaking simultaneously, it is very difficult to understand their vocalizations. As well, poor tape quality may result in inaudible speech. Therefore, it might be necessary to review the tape several times.

It is helpful to use contextual cues prior to, during and after the vocalization to determine what each child is saying. If, by this point, the transcriber still cannot determine what has been said, 'INAUD' (i.e., inaudible) should be written in the transcription section of the coding sheet.

It is easier to follow the flow of a conversation if all sounds and pertinent actions made by each child are recorded. Laughter, dramatic noises, coughs, etc. should be transcribed along with the actual speech. Actions and annotations are also to be recorded briefly within square brackets (e.g., [ ]) if they are important to the understanding of the vocalization.

The transcriber should also mark if the child is engaged in private speech by recording an 'S' for 'Self-Speech' beside the vocalization.

Example 1 illustrates the proper way to transcribe a speech sequence:

A: I'll bring mine [a chair] over here. [S].
B: [laughs] This is your pile of markers [hands A some markers].
A: What should I....
B: You have to INAUD.
A: A Tree?
B: [nods head]. Blah!
A: OK. [laughs].

General Rules and Guidelines

1. Multiple goals and/or multiple strategies

A. Strings of identical goals with identical strategies

If the initiator issues a string of identical requests (i.e., the same request more than once within 10 seconds), without allowing the target child to respond (e.g., "Give me the car; hand it over!"), these requests are considered to be a single SPS attempt.

B. Strings of identical goals with dissimilar strategies

If the string of requests utilize different strategies (e.g., "Can I have the yo-yo? Give it to me!" [a question followed by a command]), all strategies are recorded and the strategy of the highest power (i.e., target allowed the least freedom to refuse) is marked with an asterisk. The hierarchy for the strongest to weakest strategies has been arbitrarily set as follows:

1. Physical aggression
2. Verbal aggression
3. Invasive non-verbal requests
4. Commands
5. Incentives (positive/negative)
6. Indirect requests / questions
7. Non-invasive non-verbal requests

C. Strings of dissimilar goals

Often the initiator will issue a string of separate requests (i.e., a series of distinct requests for different goals) without allowing the target child to respond to each request separately. These multiple requests are to be coded as independent SPS attempts (e.g., "Can I have your green marker? Is it better than mine?" [object acquisition followed by request for information]). However, the target might only respond to one or some of the requests made of him/her (e.g., I:"Do you like my dolly? -- Guess what her name is." , T:"Is her name Sarah?"). In this case, the appropriate outcome is coded for whichever request was responded to and the outcome is coded as 'unknown' for the remaining requests.

With multiple SPS attempts, the coder must be sure the string of requests are independent. Sometimes, an initiator will use what appears to be two or more separate requests when, in fact, the requests are merely components of a more global request or goal (e.g., "Come here and catch me! [two 'elicit actions' making up a single goal of 'play joint']; "You should put the doll there

[initiator points at table] and change it." [this is a single elicit action comprised of 'attention' (pointing), and two component 'elicit actions' (putting the doll on the table and pretending to change it.)].

2. Initiations to group versus individuals

In making an SPS attempt, a child might initiate to a single child in particular, several specific children at once, or to the entire group as a general request. These types of initiations are to be differentiated. If the initiation is towards one or more specific children (e.g., "Sue, hand me that book."; "Hey, Billy and Pete, come help me lift this table!"), the ID numbers of all the target children involved are to be recorded. If the request is of a general nature (e.g., "Who wants to play with me?"; "Somebody help me with the window.") the term 'all' is to be recorded on the 'target child(ren)' comment line.

With initiations to more than one target, proximity is coded with respect to the nearest target child and orientation is coded as usual, however, 'target child' is to be specified as being whichever target the initiator is oriented towards.

3. Non-codable requests

A. Clarity of initiation

To record an SPS attempt, the coder must be reasonably confident that the target child is aware that a request has been directed at him/ herself; otherwise, the attempt is again not to be coded (e.g., [the initiator mumbles the request under his/her breath and the target probably does not hear the attempt being made]; [the child states that she wishes she had an orange crayon, but is engaging in private speech]). For group initiations, at least one of the target children must be aware of the SPS attempt for the initiation to be coded.

B. Pseudo-managing

If the initiator requests that the target child engage in some activity that the target child is already engaged in, this is termed pseudo-managing and is not to be coded (e.g., [As the target child is closing the door] "Please close the door"; [as the target child hands a toy voluntarily to the initiator] "Let me play with that.").

C. After the fact initiations

If an SPS attempt is made that is in reference to a prior event (e.g., [target hits initiator] I:"Don't hit me!") it is not to be coded.

D. Plausibility

If a request is not within the capabilities of the target child and/or within the realm of 'acceptable' behaviour, the request is not to be coded (e.g., "Why don't you eat this Barbie doll!"; "I'll do a hand stand if you give me a million dollars.").

E. Requests for future events

Requests for future action (i.e., beyond the time of the free play session) are not to be coded because the outcome cannot be observed (e.g., "Wear a green shirt tomorrow"; "You can call me tonight if you like."). Even if the target child agrees to comply with the request, the attempt is not coded (e.g., I:"When the man comes, tell him we want a snack." T: "Ok, I will"; I: "Will you show me your mom's car after the playtime?", T: "I might."). If however, the request

is for an action to take place within the time limit of the play session (but beyond the present moment), the SPS initiation is coded (e.g., "Give me the car when you're done."; [target steps on initiator's drawing] "Don't step there again."). In this case, the goal and the strategy are coded as usual, but the outcome is coded always as 'unknown'.

F. Requests in response to SPS initiations

If a nonfocal (NF) child directs an SPS attempt to the focal (F) child and the focal child responds using another SPS attempt, then the focal's initiation is not to be coded (e.g., NF: "Can I play with you?", F: "Leave me alone!" [F's 'play solitary' SPS attempt is not to be coded because it is a rejection of NF's 'play joint' initiation]; NF: "You're stupid!", F: "I think you're ugly!" [F's 'hostile' SPS attempt was in response to NF's 'hostile' initiation and is not coded]). These responses are not coded because the scheme, as intended, is meant only to measure the number and type of unsolicited SPS attempts by the focal child.

4. Fantasy Requests

Often, children will make SPS attempts while in dramatic play (e.g., [in a gruff voice] "I am King! Tell me where the gold is."; [in a play-mom's voice] "would baby like some dinner?"). These requests fall into the same goal and strategy categories as non-dramatic requests; however, it is important to note that the child is requesting from within the boundaries of the dramatic play by writing 'dramatic' beside the heading 'Goal' on the SPS coding sheet. Indicators that a child is within the dramatic play-frame include the use of a 'play voice' while requesting and/or the use of the target's 'play-name'.

Tape #: _____Coder:_____

Focal Child ID:_____ Target Child ID(s):_____Session:_____ Time of Attempt:_____

Goal	Strategy	Outcome
Elicit Action/Self	Agg – Physical/Verbal	Success
Object acquisition/access	Incentives – Pos/Neg	Partial Success
Joint Action	Questions	Rejection
Play Solitary	Indirect Request	Self-Solution
Prosocial – Sharing/Assisting	Command	No Response
Attention	Non-verbal – Gestures	Unknown
Information	-Reaching/Grabbing	
Assistance	Other: _____ / Unknown	
Stop Action		
Dramatic		
Unknown/Other		

Affect	Proximity (To Target)	Orientation
Positive/Neutral/Negative	Touching	Play Object
-externalizing	Within Arms Reach	Target Child
-internalizing	Beyond Arms Reach	Elsewhere/Unknown
Unknown	Unknown	

Transcript of Attempt (Verbatim):

Initiator:_____

_____

_____

Response:_____

_____

_____